AMERICAN

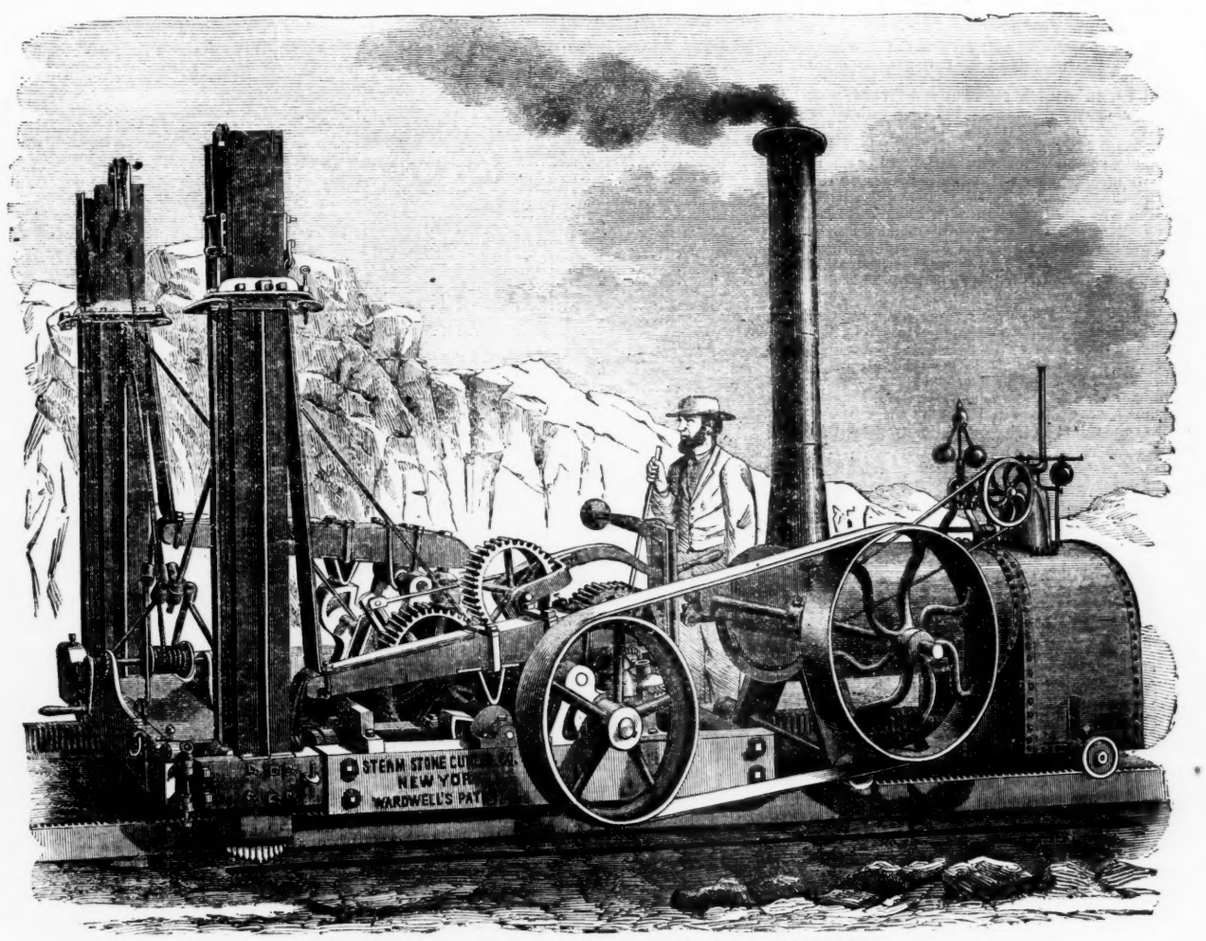
Journal of Mining,

Milling, Oil-Boring, Geology, Mineralogy, Metallurgy, etc.

VOLUME I.
NUMBER 4.

NEW YORK, APRIL 21, 1866.

$4 A YEAR IN ADVANCE.
SINGLE COPIES TEN CENTS.



DOUBLE GANG STONE CHANNELING MACHINE.

IMPROVED STONE QUARRYING MACHINE.

This week we present an admirable illustration of the "Double Gang Channeling Machine," which is used for cutting stone out of the solid Ledge or Quarry, leaving the sides straight and smooth, and the stone suitable for building or other purposes. It possesses additional interest to the public just now, because, in all probability, it will soon be used in grooving the Russ pavement along the whole length of Broadway. Already, we are told, the Common Council and Board of Aldermen have authorized the Steam Stone Cutter Company to use their machine in this humane work—humane for the sake of horse flesh. But there is another plan proposed, and the differences between the two are these: One proposes to tear up the Russ pavement and replace it with new at enormous cost; the other, as we have said, to groove the old pavement at a quarter the expense. One proposes to obstruct Broadway for a year or more, the other to do the work at night. The great advantages of the latter over the former are obvious. Now to the machine itself.

It is mounted upon a railway track, with cogs upon the inner sides of the rails, into which the cog wheels of the machine work, thus giving a forward and backward motion at will of the operator. It is driven by a five-horse power engine, mounted upon the same track, in rear of the machine. This track is movable, and fastened upon the rock to be cut by means of small, shallow holes drilled into the rock and plugged with wood, and then a wood screw turned into the wooden plugs through a section of the track. The machine has twenty-two drills eight feet long, composed of square bars of cast steel, and placed in gangs of eleven on each side. These gangs move up and down through guide-slides, which are adjustable by means of a screw, so that the drills can stand perpendicular, or at any angle up to forty-five degrees. The gangs are raised by a lever, which is operated by a cam. At the opposite end of the lever a rubber spring is attached, which gives the power to the stroke of the drill. The drills are set in the gang, so as to present a "V," face, that every drill may cut upon a step or stair, instead of striking dead, like a common hand drill. By this arrangement the machine cuts forward or backward, at the will of the operator; feeds about 3 feet a minute, and cuts from a ½ inch to three inches at a run, according to the nature of the stone. Two hundred blows are struck in one minute, or one hundred to each gang, and with a force of 1,000 pounds. The advantages claimed for this machine are, that it does the work of forty men; cuts two channels at the same time, feeding forward or backward at the will of the operator; cuts eight feet deep without difficulty, and can cut deeper by having cutters long enough; saves 33 per cent. of the stock or stone wasted by the old process; is adapted to work upon marble, granite, limestone, sandstone, soapstone, slate, etc.; cuts channels straight and smooth, making a dressed surface on each side of the channel, or cut; and, if desired, cuts the stone between channels into blocks for building purposes.

Further information can be obtained at the office of the Steam Stone Cutter Company, Nos. 18 Wall and 3 Nassau streets, New York.

Extracting Silver from Lead.

An invention has been provisionally specified for Don Francisco M. Millan del Real, of Bordeaux, the object of which is to extract silver from lead. The lead is run from the reverberatory furnace into a heating-pan, under which a strong fire has been previously made, in order that no cooling of the lead may take place, but that its temperature may be raised in a short time. The surface of the lead is skimmed, after which he introduces about one part by weight of carbonate of ammonia to 100,000 parts of lead contained in the heating-pan. To introduce the carbonate of ammonia he employs a perforated ladle with a spring lid. This instrument, with the carbonate of ammonia therein, is stirred about in the lead for about five minutes, when it is withdrawn, and a similar instrument, containing about one part by weight of sea salt to about 10,000 parts of lead, is introduced into the lead. This instrument is well stirred about in the lead for about ten minutes. If the qantity of silver contained in the lead be very high, then a proportionally greater quantity of sea salt is introduced. The surface of the lead is next skimmed and the products of this skimming are placed in small heaps ready to be placed, as hereafter described, in a close retort having a condensation chamber or chambers connected therewith by suitable passages. After this skimming is completed, about 1 per cent. of zinc is introduced into the remaining lead in an instrument similar to that used for introducing the sea salt and carbonate of ammonia. The instrument containing the zinc is well stirred in the lead for about five minutes each time. It is introduced until the desired quantity of zinc has been added to the lead. The fire is then withdrawn from under the heating vessel containing the lead, and the door of the furnace is left open so that the lead may be cooled as quickly as possible. Directly the surface of the lead presents a slightly crystalline appearance; this crystallized part is removed and placed in heaps, which are then placed without delay in the retort already referred to. He first places on the bottom of the retort a layer of vegetable charcoal broken into small pieces; upon this the crystallized matter is placed, which is next covered with a layer of charcoal. The door of the retort is then hermetically closed and a fierce fire made in a furnace under the retort. After maintaining this fire for about two hours, the zinc which was contained in the silver and lead introduced into the retort will be found in the chamber of condensation in connection with the retort in a state of oxide of zinc. When the distillation is completed, which may be readily ascertained by looking through a door into the condensation chamber, the retort is opened and the product of the second skimming introduced in order to combine it with the silver contained in the retort. The door is then closed for about ten minutes, after which the rich lead is drawn off from the retort into a pot, from which it is taken to be refined. It will be found that all the silver contained in the lead (excepting about 1½ to 2 parts of silver to every 10,000 parts of lead) is found reduced to a small volume, with sufficient lead for its cupellation. Directly the crystallized matters resulting from the third skimming have been introduced into the retort, the lead remaining in the heating pans or vessels is run off into a reverberatory furnace, where it is kept under the action of a fierce fire for about three hours. It is then drawn of and cast in suitable moulds.

The Thunderbolt Crusher.

The regular correspondent of the *Philadelphia Commercial List*, writing from Austin, in Nevada, says of this machine: As a matter of interest to all connected in any manner with the reduction of ores, and to those especially of Philadelphia who have, with an abiding faith, been induced to lead the way in procuring and shipping to this country the machines known as Gardiner's Thunderbolt Crusher, I will here record the trial of the first one yet placed in position in this section of the country. The Coral and Aspinwall Company, whose mine is located in the Amador District, about six miles north of Austin, have, notwithstanding the inclement weather, succeeded in getting theirs ready for work. To-day, in the presence of a number of invited guests, all, I must admit, more or less skeptical as to the efficacy of this "innovator," the machine was started, a ton of ore (2,000 pounds) weighed, fed to the crusher, and ground to the finest powder, without noise, and seemingly with the greatest ease, in just forty-six minutes' time. All who witnessed the performance were gratified, and although a test of several months should be made before an implicit dependence be placed in their efficiency, I am not as much inclined to assert that they will *not* supercede the stamps as I formerly have been. I had but very little faith in them—in fact was quite certain they would not answer the purpose for which they were intended—but now it is wavering, and as the first one set in motion here has performed most admirably, I hasten to award the just meed of praise to which it is entitled. Any machine or process that in any manner tends to lessen the cost or render more simple the reduction of ores, confers not only lasting benefits upon our particular locality, but of the entire commercial world The Coral and Aspinwall Company have upon the surface perhaps two thousand tons of ore which will thoroughly test the "Thunderbolt," and I shall watch its progress with interest.

Mining Summary.

Exchanges having failed to reach us this week, our Mining Summary is necessarily brief.

Nevada.

Humboldt.—A correspondent furnishes us with the following memorandum of Assays made from different classes of rock from ledges in Buena Vista mining district, by Blake & Co., Unionville, Nevada:

NO. OF ASSAY.	NAME OF COMPANY.	NAME OF LEDGE.	DESCRIPTION OF ROCK.	TOT. VAL. PER TON 2,000 LBS.
3	Golden Fleece	Golden Fleece		$ 343 39
4	Empire	Empire	Average	79 62
34	Brutus	Brutus	Black Streak	291 13
"	"	"	Purple Veins	176 34
46	Sargent	Sargent	Decomposed	1,059 52
49	Seminole Co. N. Y.	Manitowoc	Mineral quartz	2,426 24
173	"	"	Red decom'p'd	1,133 22
289	Logan	"	" mineral	4,205 98
358	Seminole	"	" "	4,066 15
62	Atlas	Iuskip	Float Rock	891 81
92	"	"	"	3,396 63
243	"	"	Sp'm's, choice	6,609 32
421	"	"	Decom'd Rock	181 57
64	Cincinnatus	Cincinnatus	Average	199 04
217	Sinaloa	Sinaloa	Selected Rock	423 95
250	Sinaloa	"	Average	210 03
258	Monitor	Monitor	Selected	861 26
296	Chamelion	Chamelion	Float	439 64
363	Anderson	Anderson	Aver'e sel'ct'd	688 04
364	"	"	Brown Mineral	3,281 30
365	"	"	Red Mineral & Quartz	265 65
399	Jackson	Jackson	Average	101 65
463	Cedar Hill	Delerio	Decom'd Rock	64 42
530	Mount Vista	Detroit		180 38

ASSAY OFFICE OF CHARLES BALBACH, TRINITY CITY.

2,000 LBS. TO THE TON.

Eagle Ledge	$ 399 60	Fourth of July Ledge	103 44
Peru "	268 15	Empire Ledge	128 87
Manitouvac Ledge	1,763 46	Brutus "	184 32
Inskip "	11,13 61	Monitor "	638 74
Arizona "	138 24	Arkansas "	42 24
Chameleon "	475 38	Havana "	122 84
Jackson "	210 08	Leroy "	30 72
California "	87 32	Sargent "	734 88
Comet "	65 76	Manitouvac " 1st south extension	819 26
Black Hawk "	124 80	Arizona Ledge	162 18
Tom Moore "	116 82	Sinolon "	24 08
Golden Fleece "	103 76		
Blue Bell Ledge	$ 281 76		

The Assessor for Humboldt county, in his report for the year ending September 30, 1865, states $100,000 of bullion as the product of that county. The total yield of the Sheba mine is reported at $70,000, the ore averaging $140 per ton. The Assesor of Lander county, says that during the last six months of the year, 36,000 tons of ore were reduced in the county, at an average cost of $75 per ton, and 10,000 tons were taken out and laid by, to be reduced when the expense shall not exceed $50. The number of miners was estimated at 1,000. This county has three water-power quartz mills, with thirty stamps in all; and sixteen steam quartz mills with one hundred and thirty-three stamps. The Surveyor and Assessor of Nye county make a joint report in which they state that there are four quartz mills in operation in Nye, and four in progress, one at the Murphy mine, Twin River district, with forty stamps, to cost $150,000. The number of miners is estimated at 500; the total amount of bullion is placed at $100,000. The cash working capital introduced within the year, is stated at $1,000,000.

New Truckee.—The *Enterprise* has seen some excellent ore from the New Truckee district, which was taken to that office by Mr. P. Williams. In the serics are included the Moonlight, 4½ feet wide; the Northern Light, 7½ feet; and the Morning Light, 12 feet in width. The ores from these leads assay from $138 to $600 in gold and silver. Mr. Williams exhibited a specimen of argentiferous galena which assays at the rate of $80 per ton in gold. So large a per cent. of gold has seldom been found in argentiferous galena.

Mammoth.—Mammoth District is situated about sixty miles in a southwesterly direction from Austin, and the locality is remarkable for its numerous and uniform metal-bearing quartz lodes. The ore is not of such an extraordinarily rich character as in some of the other districts; yet as it exists in inexhaustible quantities, and will pay a sum considerably more than the cost of extraction and reduction, a large number of mills will most certainly be erected here, and a great laboring force required. The ledges are generally of fair size, and, as the ore is most intimately blended with the gangue throughout, will require but little assorting, as the whole vein matter will, of necessity, have to go through the mill. One small experimental mill only has as yet been erected at Mammoth, though several large ones will be built the coming season. Gen. Rosecrans has purchased largely in this district, and now has a force of men at work here. The ore, as a general thing, will yield from $50 to $100 per ton. Water can be had in an abundant supply by digging a few feet, and the adjacent hills are thickly covered with excellent timber for fuel.

White Pine.—Parties are leaving here every day for the famous district of White Pine, fully determined to be upon the ground when the snow disappears, in order to locate all ledges not hitherto discovered. From present indications, this locality will be fully as attractive in future as any other in the State. Its ledges are numerous, and of large size, the ores of which are surpassingly rich. A splendid quality of timber is close at hand, and in qurntities sufficient to supply every demand for years to come, until the completion of the Pacific Railroad. Salt for chloaination exists upon the plains hard by, and very many acres of arable land that now, in its natural state, produces thousands of tons of superior hay, lie immediately contiguous.

San Antonio.—From San Antonio, we hear that that the Pioneer mill, after a suspension of a few weeks has again set its stamps in motion. They have a splendid lot of ore from the Lee mine to work, and its first shidment of bullion will open the eyes of the people in regard to this district. Its average production, with ten stamps, will probably exceed $1,000 daily, the Macedon Company are at work incessantly extracting large amounts of ore. I understand that this company now have a mill of twenty stamps, with a capacity of forty, at San Francisco, that will be shipped to its destination forthwith and erected with despatch. The Liberty is is also in a prosperous condition. A new discovery, called the Revenue, promises to equal anything yet found here.

Lander Hill.—The various mines upon Lander Hil are in active operation. Work upon the Revenue Extension was recently commenced, and a depth of 75 feet already reached. The Washidgton, Savage, Morse, Bascobel, Fuller, Providential, Nina, Oregon, North Star, and others are raising some very fine ore. . . . Work on the Hopkins Tunnel, has of late progressed very fairly, and the tunnel is now in for a distance of 250 feet. Water was struck in it a day or two since, after cutting the first lode. This will continue to increase as each successive vein is crossed. Up to date but little hard rock has been encountered, and as everything has been perfectly dry until within a few days, but little timbering has been required.

Pennsylvania.

The Pottsville *Miner's Journal* of April 14th, says: The quantity sent by railroad this week is 77,853 11—by canal, 36,504 10—for the week, 114,358 21 tons, against 80,914 tons for the corresponding week last year. The shipments are very heavy this week from this region, showing an increase on the corresponding week last year of 33,444 tons. The trade, however, was exceedingly dull last year at this time owing to the collapse of the rebellion. The demand for first quality coal is fair, but very dull for second quality. Prices rule low, but the low rates contribute largely to an increased consumption. The men have acquiesced in the reduction of wages, and the collieries are generally at work, as the shipment above indicates. A further reduction in prices has been indicated in some quarters. This would be injudicious—men cannot live at less wages with the present price of the necessaries of life. Nothing but the alternate of a stoppage of collieries would justify a further reduction in wages below the lowest rates now paid in this region. The trade sums up this week as follows compared with last year:

	1865.		1866.		INC.
	WEEK.	TOTAL.	WEEK.	TOTAL.	DEC.
P & R R R...	52,488	869,197	77,854	916,013	46,816
Schuyl Can..	28,426	84,302	36,505	136,283	51,981
L Val R R...	33,044	466,576	29,185	525,823	59,247
Lehi'gh Can.	5,671	5,867	17,809	20,398	14,531
Scrant Sth...	19,714	170,653	22,955	225,623	54 970
" Nth...	3,201	38,207	7,059	88,241	50,034
Penn. C C...					
By Railroad..		95,943		100,719	4,776
By Canal....					
Del and Hud.					
Wy'ng Sth...					
do Nth...					
Shamokin....	9,719	56,640	8,813	101,725	45,085
Trevorton....	1,104	5,176	968	10,990	5,811
Short Mt....		16		5,426	5,410
Franklin. ...		13,810		3,446	*d*10,364
Broad Top...		61,453		36,291	*d*25,162
	153,367	1,867,843	201,158	2,170,978	
			153,367	1,867,843	
			47,791	303,135	

THE ANTHRACITE CONSUMER'S RAILROAD.—We find the following letter published in the Philadelphia *Press* of Thursday: HARRISBURG, April 11.—"It is understood that a corps of engineers will commence surveys for the route of the Anthracite railroad within a few days, the southern terminal point being on the Delaware river below the city. The stock-books will be opened within a month in the cities of New York, Boston, and Philadelphia; and the managers of the enterprise claim to have secured the aid of such financial parties as will insure the building of the main line of road from the Schuylkill coal-fields to the Delaware, as well as a branch road for the trade between Schuylkill county and New York. This branch road will also form part of a new through route connecting the Philadelphia and Erie railroad with New York city." We have assurances from another source that this road will be pushed through as rapidly as possible. Its terminus on the Delaware will be below Philadelphia. There is great rejoicing in Schuylkill county at the prospect of a new outlet, and we see no good reason why the whole Coal trade of the county should not come out and publicly endorse it, because we know all are decidedly in favor of the project. There will be an abundance of trade for all by the time it is built, and a new road can be built for nearly one-half the cost of the present road, which will enable it to pay the stockholders handsome dividends at greatly reduced rates of transportation.

TAPPING THE LEHIGH.—We learn that the Philadelphia and Reading Railroad Company have dispatched a corp of engineers to survey a route for a branch Railroad from a point near Barnesville, this county, via Wetherly, to connect with Pardee's Railroad in the Lehigh region, near Hazleton, for the purpose of diverting a portion of the trade via the Valley of the Schuylkill.

We understand the route is favorable. This, of course, is in opposition to the extension of the Lehigh and Mahanoy road through Schuylkill county to Mt. Carmel. . . The Reading Railroad Company is also making a road into the Shamokin region in the vicinity of the Shamokin Valley and Pottsville Railroad, now controlled by the Pennsylvania Central Railroad. . . . The Mammoth Vein Consolidated Coal Company give notice of a final assessment of $10 on each share of capital stock, amounting to the sum of $400,000 payable on or before the 20th of April, 1866, otherwise the stock will be forfeited and sold. . . . The citizens of Alleghany township, Armstrong county, Pa., are much excited over the discovery of a substance closely resembling gold. It is found in a flinty bluish rock, said to be a species of quartz. The discovery was first made on Pine Run, on a farm belonging to Mr. Gorman. It is stated that specimens of the ore have been forwarded to the assay office in Philadelphia to have it tested.

California.

Almaden.—A strike took place among the miners of the New Almaden Company on the 9th inst. They hold possession of the mine, and allow no one to work. Quicksilver advanced ten cents a pound on the 11th, in consequence. The proprietors say the disturbance grew out of the fact that 71 squatters, not in the employ of the Company, refused to comply with the order to sell their buildings to the Company and move. Ejectment suits then commenced, when the squatters drove the miners from work. The ringleaders were arrested, and warrants had been issued for others. The work at the mines was still suspended on the 12th.

Nevada.—A correspondent of the San Francisco *Bulletin*, writes of the Star Spangled Banner Mine as follows, "This mine lies about three miles east from Nevada, and was discovered several years ago by a party of men now residents of San Francisco. As little faith was had in this branch of mining at that time, the lode was permitted to lie unworked until within the last year and a half. During the year 1864 a company of prospectors relocated the ledge, and after a few months work succeeded in proving it to be one of the best in Nevada county. The original locator hearing of this, talked of commencing an action for the recovery of the mine. Not disposed to jeopardize their interests in a legal warfare with capitalists, the then proprietors sold the mine for $15,000 to the present proprietors, Messrs. Kidd & Tisdale. Notwithstanding this sale, an action was instituted by the original parties, but was subsequently compromised on their receiving from the present company the sum of $15,000. The $30,000 thus expended in the purchase of the mine is but a moiety of the sum the owners feel justified in expending in the actual development of the mine. Since the final settlement of their legal difficulties they have erected hoisting machinery at the mine and a 12-stamp mill just below, which for strength and finish cannot be excelled. At the present time they employ a large number of men—miners, carpenters, blacksmiths, wood-choppers, etc., are daily employing additional help, and are in all cases considered good for $2 per day. The ledge is from one to four feet in thickness, and averages $50 per ton. . . . About half a mile north of the Star Spangled Banner lies the Union mine. The little village in the vicinity of this mine is one of the results of its discovery. The lode is now owned by the "New York and Grass Valley Quartz Mining Company," a powerful combination of capitalists, under whose management and control mining operations have been commenced and successfully carried forward. Every department at these works is under the direct supervision of a man thoroughly skilled in his employment, and the result is a degree of precision and order seldom surpassed. This is undoubtedly attended with greater expense than in similar operations where one man, and he but poorly skilled, performs the work of a dozen different departments. The proprietors, however, strictly adhere to their plan, claiming that the additional expense is more than made up by thoroughness in the several departments.

Willow Valley District.—In mentioning this district we do not intend to speak particularly of the score of valuable ledges within its borders, but shall content ourselves with a few remarks concerning the most important enterprise. It may be remarked, however, that if the mining operations now carried forward in this locality shall continue through the coming summer—as they undoubtedly will—Grass Valley, so long the banner precinct, will have to yield its claims in this respect, and in so doing will, no doubt, generously assist in transferring them to this new district. Willow Valley is situated on Big Deer Creek, about two miles northwest of Nevada. The German Company is made up of German capitalists of San Francisco, is the owner of the Oriental mill and mine in the above district, and has during the past year made it the scene of extensive mining and milling operations. In addition to the ordinary method attending the labor of extracting and crushing the ore, this company has erected a smelting furnace which is said to be fully adequate to the work of separating the precious mineral from its several affinities.

Mountain Rose District.—This district lies on the north bank of the South Yuba river, about seven miles north of Nevada, and nearly equi-distant from North San Juan and Columbia Hill. It first became known as a mining district about five months ago, and since its discovery has frequently been alluded to in the Nevada "Transcript." In the month of October last a company of "poor but honest" mechanics of Nevada city started on a prospecting tour in this vicinity; and when their patience had almost become exhausted in a fruitless search, one of the party accidentally discovered the croppings of a fine traceable ledge, which they subsequently named the "Mountain Rose." As considerable free gold could be seen in the rock taken from the croppings, the company immediately commenced active mining operations, but were soon compelled to desist, owing to the heavy rains, which made the road to the mine impassable, and rendered further work dangerous at that particular stage of their proceedings. As Spring approaches, however, preparations are being made for a further prosecution of the work already commenced, and before the coming Summer closes the ledge will be fully tested, and the hopes of its owners, no doubt, fully realized. One very noticeable peculiarity of this locality is that some six or seven different and well-defined ledges have been discovered within a mile of the Mountain Rose ledge, all of them running in the same direction, having the same dip and angle, and bearing all the other general features of the Mountain Rose. Under the excitement created by the discovery of the first-named ledge, almost the whole district was staked off, located and recorded by a score of other parties who are anxiously waiting an opportunity to develope their respective claims. . . . The "Transcript," of March 17, says; "A rich strike of placer mines has been made by O. W. Cherry and T. M. Francis, near Birchville. They have been prospecting in a flat above Allison's ranche, and have struck dirt which paid $90 in four days' washing to two men. They have about four acres of the same ground to work, and no doubt have a good thing. The Pennsylvania Company are taking out some excellent rock. On Thursday night, the night shift, working ten hours, took out six tons of rock, which will pay from $30 to $40 per ton. The company have about fifty tons on the surface, and the mill will be started for crushing next Monday. The tunnel is run about thirty feet from the shaft, and they calculate to run it at the present level until they reach one hundred feet." . . . Two more ledges were discovered, and work commenced on them, March 17, at Willow Valley, says the "Transcript." The ledges are of good size, and the specimens brought into town showed considerable free gold, with any amount of rich-looking sulphurets. Willow Valley is fast becoming one of the richest mining localities in the county. . . . The Nevada "Transcript," of March 22, records the following local intelligence: "Yesterday afternoon McIntire McPutney was killed by a blast in this city. He was engaged in clearing a place in the rear of his dwelling, on Washington street, for a garden. He put a blast into the rock, leaving a fuse only about six inches in length. This he ignited, and before it was possible to get out of the way the blast was discharged. A piece of rock weighing nearly a-half pound was driven through his left eye, and buried almost out of sight, and his head and face were horribly mutilated. The wounded man was still breathing when we left the ground, but no hopes were entertained of his recovery. Oliver Gates, a miner, was killed in his claim near Rock Creek, yesterday morning. Deceased was a native of Maine, and about thirty years of age. He had not had much experience in mining, and knew very little about it. A short time since he found in his claim a streak of rich dirt, and, for the purpose of working it, a cut ten feet deep was run through the soft bed rock. This cut was badly constructed, being not more than two feet wide at the bottom, with almost perpendicular banks. Gates was warned by his partner not to go into the cut, as it was dangerous, but he did not heed. The partner was called away, and during his absence the bank came down, completely covering Gates. Assistance was soon obtained, but when he was found life was extinct. We are furnished with the following figures, taken from the journal kept at the office of the South Yuba Canal Company in this city: The entire rain fall from September 1st, 1865, to March 21st, 1866, was 44.76 3-4 inches; during the month of March, 4.83 inches have fallen. The rain has been well distributed through the season, which has been an unusually favorable one for miners. Nearly all the claims in the county have been worked without interruption.

Tuolumni.—The Sonora *Herald* of March 17 has the following mining intelligence: In accordance with our previously expressed intention, we wish to state a few items with reference to a quartz lead, known as the "Rio Vista," located some ten miles from Sonora, in a westerly direction. This mine lies just across the Stanislaus river, and is consequently in Calaveras county, although from its location and the situation of other mines in the immediate vicinity, Sonora must always be the source of all supplies. The owners are all residents of this place and Columbia. The Rio Vista claim is in some respects a very extraordinary one, and one of which it is most difficult to form any positive opinion until it is more fully developed. The claim of the company is situated on a hill that rises very abruptly from the Stanislaus river, upon which and embraced in the claim there have been discovered so far, sixteen distinct veins, varying in width from two or three inches to a foot or more, and spreading out something like the fingers to a man's hand, but having one general direction. In every one of these leads gold has been found, and from some of them very rich specimens have been taken. Although the claim originally cost the company a very considerable amount of money (10,000 dollars, we believe), and notwithstanding the great richness of the rock taken out in small quantities from some of these numerous veins, the claim has been regarded with distrust by those who pretended to some knowledge in such things. There never has been any question but what there was large quantities of gold in the hill; but there have been grave doubts expressed as to whether these small veins would concentrate so as to pay for working, or "pinch out" entirely. Under these circumstances the company some time back determined to thoroughly prospect the claim and determine, if possible, whether they had an "elephant" on their hands or not. V. R. Raymond, of this place, was duly elected superintendent, and in obedience to instructions, prepared to sink a shaft. He commenced it at a point about eleven hundred feet above the bed of the river, and where, in his estimation, the probabilities were greatest that the leads would come together, if at all. They are now down on the shaft about forty feet, and at that depth eight small veins have come together, making one vein perhaps two feet wide. On one side of the vein there is a beautiful granite wall, well defined, and the Superintendent has no doubt that in a few feet further a good wall will be developed on the other side. The shaft was commenced where there was no indication of a leak, and had fully paid for itself up to last accounts, six or seven hundred dollars having been taken out in the progress of the work. The rock has been gradually changed from a watery quartz to quartz of a softer look," and the metal is regularly diffused through the rock. All we can now say is, that the lead looks remarkably well.

El Dorado.—A correspondent of the *Union*, writing from Georgetown, March 19th, says: The Woodside & Shanklid quartz claim, which has not been worked for about two years—not because it was not a good mine, but because the owners were not able to get the necessary means—has been pumped out, the tunnel extended and the main ledge struck at a depth of about seventy feet. The richest rock that I have ever seen is being taken out at this mine, and large numbers of people visit the claim every day. It needs no puff from me. The rock will show for itself. I think Georgetown is redeemed. There are good ledges here. All we want is a little capital and all is well. There will be no need of our citizens going to hunt up new diggings in some distant Territory.. . . . The Placerville "Mirror" of March 17th says: We have been shown a beautiful bowlder of quartz from the Woodside claim, Georgetown, which is literally spangled with gold, looking as though a very few tons of it would be a fortune for any moderate minded individual. It came from the bottom of a seventy-five foot shaft, where a vein was struck on Friday which is between three and four feet wide, and pays all through. The proprietors have a five-stamp mill, in which they are now crushing this rich rock. . . . Speaking of a claim near Placerville, where $20 was taken out of one pan of dirt, and forty car loads yielded $400, the Placerville "Recorder" says; We wouldn't have this report circulated out of this immediate neighborhood, for if it should be heard of in Idaho, Montana and New Granada, it would bring hither a class of persons from those regions who would be as badly disappointed when they got here as some of our citizens who are preparing to emigrate will feel when they reach their respective lands of promise.

Trinity.—The "Journal" of March 17th has the following: We hear that the upper end of the county is just thawing out, and that the prospects for a good mining season about Trinity Center were never better. At Minersville little has been done yet on account of deep snow. We are informed that Mead & Ellis, in the old Fred. Leach claim, have struck the old French Gulch lead, and that their diggings are doing the fair thing in return for their labor. From what we can learn Fred. is loser to the tune of nearly $2,000 since he abandoned that claim for one in Humboldt, last Autumn. The fact will be more consoling to the present owners than to him probably. On the Buckeye creek, this side of Bates' ranch, Sam Griffith not long since picked up a sample of pure gold weighing a trifle less than sixteen ounces. The miners on that stream have had a fine sluicing season, and water will be plenty for two months yet. William Ruch, from Kellog's diggings, Hay Foyk, informs us that it has been a splendid working season, and that water for sluicing will last until August. The gold yield in that section will be large this year. This has undoubtedly been the most favorable mining season for most localities in this county ever known. From present appearances water will be plenty everywhere until July.

Shasta.—The following mining intelligence is from the Shasta "Courier" of March 17th: Some days since a man living in this place handed to a confidential friend a piece of rock, and asked what it was. We have seen the specimen in question, and have compared it with a specimen of cinnabar from the New Almaden mine. The two are alike. We cannot get at the full history of the discovery or its extent, but are assured that the location is very near town. In connection with the matter we know that one man in the secret, and not much given to traveling, has recently gone to the Bay, and that he took specimens of the cinnabar with him. We are promised full particulars in a short time. . . . The Eureka Company, at Muletown, are down on their shaft twenty-six feet, with prospects fully as good as the Potosi. They will commence getting out rock immediately, and as soon as sufficient is obtained to justify it, a mill will be erected.

Colorado.

The Black Hawk *Mining Journal* of April 5, says: "Mr. Gould is getting out very good looking ore for the Sterling Company, on the Bobtail. The confederation pump is on the ground, but no movement is making towards putting it in. The Keith Mill has just finished off ten cords of ore for Senderfer, and has gone on to a lot for the Narragansett Company. Several other companies are anxiously awaiting their turn. The mill will soon demonstrate whether or not it can treat anything but Bobtail ore—that it cannot, being the latest charge of its hard-pushed energies. The contrary has been proven on small quantities in numerous instances, but in lots of ten cords it will be a more satisfactory demonstration. From Senderfer's ten cords of Bobtail ore, 402 ounces of gold—coin value, $17 an ounce—was obtained. People may make their own calculations on these figures." . . . From a friend in the city we learn, that the Sterling Company have out over one hundred cords of ore at their shaft on the Bobtail Lode. They have been offered $600 a cord for this ore. Sixty thousand dollars is a nice little pile to refuse for a lot of ore taken out in the course of one winter. The claim of this Company on the Bobtail is 66 2-3 feet. . . . Work will be resumed on the Mystic Tunnel of Nevada about the first of May. It penetrates Quartz Hill, and will tap a great many Lodes. R. G. Kellett is Superintendent. . . . The Colorado men are leaving New York every day now, to resume the development of the mines. A great many have succeeded in securing working capital, which insures the continuous working of the mine—the owner sharing the risk with the eastern capitalist. We notice that companies now getting under way, are generally organized upon a sounder basis than those of 1863-4. They have smaller capital stocks, and more working capital; and gene-

rally are based upon developed mines—all of which is very encouraging.

Michigan.

We learn, says the Keweenaw *Times*, that the Ætna stamp mill will soon be in operation. The engine and stamps are ready, and all that is needed is the washers. Mr. Wood has decided to put up the Collum machines, being convinced that, all things considered, they are the best in use. . . . Circumstances seem to have combined to injure the Pennsylvania Mining Company by creating a distrust of their drafts. As far as we can learn there is no foundation for the scare whatever. No drafts have been protested, the mine is looking as well as it has at any time within a year, a considerable amount of their copper is smelted and ready for market, enough to more than pay all the drafts issued between this and the opening of navigation, and all the floating paper now in the country. A correspondent in another column of this paper calls upon us to say something to allay the distrust, and this much we will say: There are sundry and divers little sums owing to us in this county and elsewhere, and we will be very glad to give receipts in full for Pennsylvania drafts, and if there is any unfortunate individual holding one of them that he does not know what to do with, let him send it to us and we will send him a copy of this paper for a year and the change in greenbacks. . . . The product of the Quincy Copper Mine, Lake Superior, for 1865, as made ready for shipment, was 1,360 tons, 1,980 pounds, including 2,524,813 pounds of stamp and 197,167 pounds of mass copper. The gross earnings of the company for 1865 were $703,077.87, and the expenses $634,571.44, leaving a net profit of $68,505.93.

Ohio.

The Sandusky *Register* says: The belief is gaining ground among scientific and unexcited men that gold will be found in paying quantities at the Belleville mines, in Richland County, this State. One hundred acres of the Thompson farm have been purchased by a mining company, and work will be commenced at once. Mr. Jackson, a citizen of Newark, and a California gold miner of long experience, is one of the above company, and has satisfied himself, by thorough prospecting, that these lands are of great value. Out of a few pans of surface-soil, Mr. Jackson has secured about twelve dollars in gold particles, nearly in a pure state. Belleville is a thriving town of seven hundred inhabitants, situated in Richland County, fourteen miles south of Mansfield, on the Sandusky, Mansfield and Newark Railroad.

New Hampshire.

Rich gold, silver and plumbago discoveries are reported in upper New Hampshire and in portions of Vermont. It is stated that specimens of white quartz, blown out by a blast in the town of Lisbon, in the Franconia Mountains of New Hampshire, were analyzed by the State Assayer of Massachusetts, and pronounced to be worth at the rate of one thousand and twenty-six dollars a ton, for the gold and silver contained in them. Other specimens of gray quartz yielded fifteen hundred dollars to the ton. A mountain of plumbago, mixed with silver, is also reported to have been recently discovered.

Kentucky.

Lead mining is exciting fresh interest in Kentucky. In Owen County work is progressing under favorable auspices; considerable quantities of ore have been taken from the mines bordering on the Kentucky river, and on Twin creek a furnace has been put up, and small amounts of lead have been made suitable for the market. . . . A Zinc and Lead Mining Company has been formed by Pittsburgh and Philadelphia parties, with a capital of $500,000, for the purpose of developing certain veins of lead ore lying in Crittenden County.

Georgia.

In Columbia county, Georgia, a gold mine has been worked for more than twenty-five years, and has been regularly productive every day since operations have been commenced upon it. The vein is well defined and contains little pyrites and a little galena. Though the workings have been carried below eighty feet, there is no appearance of the gold failing in the bottom. The veins in that county and in those where quartz-veins, have been discovered are found of all sizes, from a few inches to several feet.

Maine.

The Calais *Advertiser* reports that the antimony mine near St. George's Lake, on the Magaguadavic River, is to be worked this summer. A quantity of the ore has been sent to New York and smelted, and is pronounced superior to any yet discovered in any part of the world, except that in France, and equally as good as that. The mine is said to be very extensive, and the gentleman who assayed some of the ore says it is of incalculable value.

Mexico.

According to the Mazatlan *Times*, Gen. Ramon Martinez writes from Morelia, Jan. 12: "In my frequent expeditions south of Morelia, and more especially in the direction of Estacuaro and Tiripitio, in pursuit of the dissidents, I made a very important discovery. Although my knowledge in matters of mines is limited, I have been able to verify in the above-named places the existence of very extensive gold placers, and veins of the same metal. It is evident to me that these placers surpass in wealth all that have been discovered on this continent. These rich *lyings* are situated within a short distance of Morelia, in a country where the climate is as mild as that of the capital. I have thought it my duty to give publicity to these facts, assured as I am, that they will be of great interest to all persons concerned in mining operations, and that the Emperor will cause the necessary measures to be adopted for the protection of laborers who feel disposed to work the placers." Michoacan is Department No. 22, and is situated east of the former State of Guerrero, of which Acapulco was the capital. Morelia, the capital of Michoacan, is a city of 25,000 inhabitants, situated in latitude 18:43, in nearly a due east course from Manzanillo, and about seventy leagues, in a southerly course, from Guadalajara. Owing to disturbances between the coast and Michoacan, we opine that the best route from here to Morelia is that by way of San Blas and Guadalajara.

Canada.

The resources of Canada are comparatively little known in this country, except among the few that have taken the trouble to study them; and at the present time a glance at them is not uninteresting, and the statement of a few facts in relation to them will surprise many who have only thought of Canada as a rather cold, unproductive region north of the United States. The mineral wealth of Canada is immense, needing only capital to develop it and render it a great source of national wealth. The Lake Superior copper has already become famous for its extent and value, and the iron deposits in the neighborhood of Lake Superior seem to be practically inexhaustible. In the vicinity of the Gilbert and Chaudiere Rivers, in Lower Canada, have been found large deposits of gold. Of the oil wells of Upper Canada, probably but few have any adequate idea of their importance. The section of country embraced by them is over ten thousand miles.

Oil Summary.

Pennsylvania.

Telegrams from Titusville, Pa. state: A fire broke out here at half-past 1 o'clock this morning, (Thursday 19th,) in a small frame building on the corner of Franklin and Short streets, and thence extended in all directions with great rapidity from the railroad track. The following are among the losers: Billingham & Coles' machine-shop, Union Hotel, Railroad Hotel, National Hotel, Buffalo Dining Saloon, Adam Good's foundry and machine works, Muller & Wichert's grocery, Olmstead & Jewhurst's paint and oil store, Granger, Tuttle & Co.'s, grocery and feed store, Mueller's cigar and tobacco factory and various other minor buildings, McMullen & Bryan's foundry, the Petroleum Hotel, John Sacke & Sons' machine shop, and the bakery next north of the foundry are the only buildings left on Franklin street, between the Raceway and the railroad. Two parties have been arrested on suspicion of having caused the fire. The loss is $300,000.

The *Oil News* says:—The fourth "pipe" from Pithole for transporting oil—this one to Titusville—is just ready for testing. Of the others, one is laid to Miller, the other two to Henry's Bend and Oleopolis, on the Alleghany. . . . The Island well, Pithole, is flowing again at 100 barrels per day. . . . The Thompson and Bradfield well, on the St. John Island Run, near Smith's Ferry, was tubed on Saturday, and is now flowing at the rate of 70 barrels per day. There has also been several strikes made on this property, which are not tested yet, but give every indication of being good wells. . . . The impression that work on the Reno and Pithole Railroad has been suspended on account of the failure of Culver, Penn & Co., is erroneous. . . . Up to March 31, the Phil. Sheridan well, on Bennehoff Run, had produced 14,000 barrels of oil. The well was struck on the 1st of March. . . . It is stated that the proprietors of the Plank Road between Pithole and Meredith intend to compel the Pipe Companies to take up their pipe from beneath the road, as the charter of the latter does not give them any right to enter upon or use the territory of the road. . . . A neighboring paper recently gave the average daily cost of pumping a well, through the oil regions, at $24.73. . . . Coal is selling at Reno at 20 cents per bushel. . . . A queer accident occurred at the Reed well, on Cherry Run, one day last week. A team of horses attached to an oil wagon became frightened at the locomotive of the Reno Railroad, and ran away. The wagon tongue came in contact with an oil tank, broke through it, and about 600 barrels of oil were thus lost. . . . Henry's Bend, the junction of the Henry Bend and Pithole Pipe, is quite a town, but if the shipping of oil through the pipes is suspended, as is expected, it will amount to but little. . . . A well purporting to be producing 500 barrels daily has been struck on the Ross Farm, four miles below Franklin. . . . Oleopolis is full of life and will continue so as long as the river is navigable. One steamboat and four tow-boats are now plying between Oil City and this place. . . . . The Pitcher well, National Oil Company, West Pithole, is doing 100 barrels a day. . . . The Titusville *Herald* says: On Monday last, the Hoskin Oil Company commenced pumping the Hoskin well at the rate of 95 barrels in twenty-four hours. On Wednesday, while drawing the sucker rods, it commenced flowing at the rate of 400 barrels.

West Virginia.

Says the last issue of the Parkersburgh *Times:* We know that the oil region within thirty miles of Parkersburgh produces nearly 2,000 barrels per day, and by taking the whole State in consideration, it will reach 3,000 barrels. To-day we have the report from Burning Springs of another good well flowing 500 barrels per day, and every day but adds to the already numerous paying wells in our oil region. . . . The Shaw well, a four hundred barrel strike, at 462 feet, on Lick Run, is reported. . . . Says the Parkersburgh *Times* of March 31st: Jones & McConnehey struck a well at Burning Springs, on Thursday, which flows 500 barrels a day, and sometimes sends it forth with great power. It is pronounced a remarkable well. . . . The Dearborn well, on Standing Stone, four miles from Newark, which had been flowing salt water for 36 hours, commenced on Thursday flowing pure oil. They cannot yet tell how much, as they have to tank it. Depth between 800 and 900 feet. . . . The Jones well, at Burning Springs, was flowing from five to seven hundred barrels at latest accounts. . . . A correspondent of the *Times* says: I herewith send you a sample of the oil in the Harris well, on Stillwell Creek, in Wood county, 10 miles from Parkersburgh. The quality is superior to any yet discovered, except that in the Williamson well. This is the same well bored by Jacob Cork in 1861, since leased by John Harris.

Kentucky.

The Otter Creek Oil and Mining Company says the *Oil News*, have struck a ten barrel well at 140 feet, in Wayne County. . . . There are seven producing wells near Glasgow. . . . Some sixty wells are being put down at various points along the Cumberland. Two wells on brimstone Creek, a tributary, are being pumped. . . . Our correspondent, Prof. Diehl, is putting down a well at Cloyd's Ferry. . . . Obed's River, Bear Creek, Cherry Fork and other streams in the Cumberland country are looked upon as first class oil territory. . . . The Kinslow well, on Boyd's Creek, is still flowing 80 barrels per day. It was struck in June last, at 146 feet. . . . On Trigg's Spring, branch of Boyd's Creek, the Tull well, at 230 feet, has struck oil. . . . The Davis well, on Boyd's Creek, is pumping 25 barrels per day at 180 feet. . . . The Falls City well, at the mouth of Sulphur Spring Branch of Boyd's Creek, has a fine show at two hundred and eighty feet. . . . Says the Glasgow *Times:* We learn that several new wells are about starting down on Boyd's and Skeggs' Creeks, and we hear some talk of testing the South Fork of Beaver Creek, near our town limits, as we have an oil spring within the corporation. . . . Several wells are going down on Beaver Creek and Skeggs' Creek, with some show of oil, which is of a superior quality.

Michigan.

Says the Macomb *Press:* The Mt. Clements oil well is all right, obstructions have been removed, assessments paid up, and indications are so strong that we can almost promise a dividend. The sight is good, the contractor energetic and skillful, the stockholders responsible; under such circumstances we can only say proceed, may success attend your efforts. . . . The workmen engaged in sinking the well in Niles, reached rock on Tuesday last, a depth of 169 feet. On Wednesday morning, the pipe was nearly full of water, upon the top of which was petroleum, showing most encouraging symptoms. The well is now 175 feet deep, and the company feel confident of success.

California.

The San Francisco *Mining Press* says a party has recently arrived at Los Angelos, from the vicinity of Buena Vista Lake and the oil springs there, having in his possession a bottle containing "a mineral substance very much resembling crude petroleum, but without any smell, and possessing all the qualities of a fine writing fluid. Several experiments were made by different persons, and all pronounced it a good quality of ink, or fluid, for writing. We dipped our pen in the fluid and wrote several lines, and could not distinguish the difference between it and the best writing fluid now in use. When first used the color is a deep, rich black, but after exposure to the air the color moderates a little, still retaining a good, and, to all appearances, durable color. A company is being formed for the purpose of testing the above discovery."

Utah.

The *Vidette* says: We understand that a number of gentlemen, residents of this city and Fort Bridger, contemplate erecting machinery on their coal oil spring this summer, and have already sent East for the machinery. The spring is located in Pioneer Hollow, about thirty miles this side of Fort Bridger, and is reputed to run ten barrels per day—some say more.

Canada West.

The shipments of oil from Bothwell and Enniskillen, by the Great Western Railroad, during the year ending October 31st, 1865, exceeded 20,000 barrels. Since that time the average shipments have increased, in consequence of the operation of several new wells. The books of the railroad company show the following details for the period above mentioned:

	Bothwell. BBLS.	Enniskillen. BBLS.
November, 1864,	929	2581
December, 1864,	290	1271
January, 1865,	531	1385
February, 1865,	525	918
March, 1865,	573	904
April, 1865,	241	1592
May, 1865,	658	1355
June, 1865,	414	1972
July, 1865,	789	1446
August, 1865,	1581	1629
September, 1865,	2532	1429
October, 1865,	1459	2233

Bohn and Prince Well.—The Bothwell *Reporter* says: "We were fortunate in hitting a good time for our visit, as the pump was in full working order, and the filling of a two hundred barrel tank was nearly completed. This tank was some distance from the well, all the others, five in number, being quite full. A two-inch pipe conducts the oil directly from the pump into several lengths of nine-inch well tubing, from which it is discharged into the tank, so that there is the best opportunity for estimating the yield and quality. The stream then flowing equalled anything we had previously seen, and the proportion of water to oil seemed very small. As far as we were able to judge, we estimated the yield at 150 barrels per day, at least, and that with only thirty strokes of the engine per minute. Mr. Prince has supplied in all, up to date, about 4,000 barrels, and has now nearly 1,000 barrels on hand.

And of other Wells.—The Oxley well has been lately commenced. The engine house and derrick are both up, and the engine is expected every day. The Ray well is also just commenced, and the engine house and derrick are up. Mr. Prince has also two other

wells of his own, viz., the Humming Bird well, 194 feet down, and at the rock, with the engine and boiler in position, and the Reliable well, 60 feet down, and engine house and derrick up. The Deep Set well, upon the same property, is down no less than 602 feet, and gave two splendid shows at different depths, but, owing to the defective tubing, it could not be properly tested. New tubing is to be put in immediately. Leaving this locality and retracing our steps, we took a look at the Lester well, which is not doing quite so well as when we first saw it. The yield, however, was good, and may be taken at 40 to 50 barrels. . . . Safe across, we came upon the Day well, immediately on the bank of the river, on the Pepper farm. This is a new strike, and promises great things. The total depth is 390 feet, and pumping was first commenced on Wednesday of last week, at a depth of 335 feet. The present yield is estimated at 45 to 50 barrels. This well is owned by a Company from Lewiston, Me., and it is barely three months since it was first commenced. The Eureka well, on the top of the rising ground, is another new strike, and may be reckoned about 25 barrels—400 feet deep, pumping at 331 feet. At the Cushing well there is a capital prospect, but gas and water are rather troublesome; depth 300 feet, pumping at 280 feet. The Forest City well is somewhat lower down, and promises to be a first class well. New tanks are being erected, and it was not then pumping, but since our visit we understand that a splendid show of oil has appeared. Mr. Gross is the proprietor. The Pepper is not the well it once was, but the yield is very fair—from 30 to 40 barrels—with 600 barrels on hand. The gas here is very troublesome. Leaving the Pepper Farm, we crossed over to the Lick ravine, on the Atwill Farm, and first came upon the International well, which was not pumping so well as usual, the valve being out of order. Ten barrels was about the yield, pumping at 209 feet. The General Grant well, also belonging to the International Co., gave a considerable quantity of oil at a depth of 240 feet, but the pump has not worked well, and it is intended to sink deeper. . . . We now come to the once famous Lick Well, which has been most unfortunate since purchased by the present proprietors last fall. Everything about the well was put in tip-top order—new buildings erected, a splendid new twenty-five horse power engine, made by Thomas & Co., of Hamilton, brought along, and new tubing put in; but, in consequence of a defective joint, the tubing burst, and it has since defied every effort to get the broken part out. The owners have now decided upon sinking a new bore alongside the old one, which will involve the necessity of moving the derrick two feet, and lengthening the walking beam as much. The Scott Well, in the same ravine, but further up, is 310 feet deep. A good strike was made about a week previously, and a considerable quantity of oil was got, but the machinery being a little out of order, there was great difficulty in exhausting the water. Still further up the stream, on the Colville farm, is the Badger, which has proved itself a first class well ever since the oil appeared. There is tankage room for no less than 1500 barrels, and 900 barrels were then on hand. The position of the well is rather peculiar, for the ravine here is deep and the bank very steep. The lowermost tank is in the back part of the building, and about twenty feet above the level of the creek. Into this tank the pump is directed, the oil allowed to settle, and the water, if any, to escape in the usual way into the creek. The other tanks, to the number of six or seven, are placed in a row, from the well to the top of the bank, the uppermost one being on the high level. The engine for pumping is a fifteen-horse power one, made by Evatts, Inglis & Co., of Guelph, and in connection with it is a force pump, which sends the oil to any tank required, the top one being generally kept full, as from it the barrels are filled. The yield of oil was about 80 to 100 barrels, but it has sometimes been more. When the existing tanks are filled, Mr. Wells will build more, in order to hold on for a rise in oil, or some other turn in affairs. The Martin Well is on Martin's lease of five acres of the Colville farm, half of it being leased by the Badger Co. The depth is 350 feet, and there was a splendid show of a superior quality of oil. The Osgood Well, still in the same ravine, on the Colville farm, is 257 feet deep, and pumping at 247 feet, about 30 barrels with the engine going slow. Three tanks full and a fourth very nearly so. A great many new wells have been begun on the Colville farm, but the above are nearly all the producing ones. We now visited the Michigan Well on the "Tipperary" farm. Since we last saw it, before the strike was made, it has changed owners, Higgins & Co. having sold out to Hodges & Co. This well is no less than 602 feet deep, and was pumped at about 590 feet, and gave 30 barrels in six hours, its average yield being fully 60 barrels. When we were there the machinery was being altered; the large belt was too long, and has been replaced by a walking beam. Near the Michigan, on the other side of the Longwoods Road, is the Chicago Well, a still deeper one, viz: 697 feet, and pumping at 691 feet. This well has not realized what was expected from the fine show a few months ago. When we were there it was pumping, but the proportion of oil was very small, and the seed bag had burst. A few yards further on we came to the Gore Well, which is the deepest in these parts, being no less than 718 feet. There was a good show at a depth of 400 feet. Pumping was then going on to clear the veins, but appearances were not very promising.

Cuba.

A correspondent writes from Havana that the researches made in the course of last year for petroleum by some enterprising Americans have at last been crowned with success. The numerous specimens sent to the United States for analyzation have proved identical with the indications of oil found in Pennsylvania. . . . Several wells are now rendering oil at Madruga, on which they expect to "strike" in about three weeks. . . . Much unnecessary secrecy and mystery is maintained among speculators, and yet our capitalists seem to be well posted. . . . One remarkable thing about this discovery is its abundance, the whole island being one vast "digging." Not all the oil wealth of Pennsylvania is more than a shadow to the immensity of this island, if there is any faith to be placed in the indications alluded to. How far this great discovery will affect the business of the island in future is a problem to be well considered.

Patera's Process of Silver Extraction.

Patera's process of silver extraction, extensively used in Germany, is likely to be tried on the Pacific coast, and with the promise of success. It is well adapted to antimonial ores, 12 per cent. of lead does not interfere with it, and it can be so economically concocted that it can treat profitably ores yielding forty dollars per ton. Poor ores by it do not require so long roasting as rich ones. By this process, after two kinds of roasting, chloride of silver is secured, and as a solvent of this cold dilute hyposulphate of soda is used instead of hot concentrated solution of salt. To dissolve one part of chloride of silver requires sixty-eight parts of salt, while the like amount of chloride of silver can be dissolved quicker by two parts of hyposulphate of soda. The latter solvent is continually reproduced in the process, and consequently a full supply is required only at the beginning.

Oxydizing Roasting.—At first the ore undergoes an oxydizing roasting, with gradual increase of heat—the heat especially augmenting by slow degrees when different sulphurets are present. Stirring the ore constantly, when a red heat is attained, some steam is introduced into the furnace, but not in quantities to diminish the heat much. Four hours completes the oxydizing roasting, and the ore is then discharged.

Chloridizing Roasting.—The ore thus discharged is ground fine, mixed with 6 to 12 per cent. of salt—more or less, according to richness—and for the decomposition of the salt, two or three per cent. of calcined green vitriol is added. When red ho , steam is again used, and roasting is kept up with constant stirring of the ore, from 5 to 7 hours—or more if the ore is very rich. Chlorides of various metals result, and if the roasting has not been well performed, there will be sulphates remaining in the mass.

Purification and Dissolution.—The roasted ore is now ready for the first lixiviation, there being two—the first, with hot water, dissolves and carries off the chlorides and sulphates of copper, iron, zinc, &c., (what sulphate of silver may remain is also carried off). The second with cold dilute hyposulphite of soda dissolves the chloride of silver. In the first, charges of 400 pounds of roasted ore are thrown into tubs prepared for lixiviation like those used in Augustin's process of extraction, with solution of salt. A stream of hot water runs into the tubs for six hours, which carries off the chlorides and sulphates of the base metals. The mass thus purified is cooled with water, and is ready for the second lixiviation. In the second, the cold ore is placed in tubs corresponding to the others, but smaller. The cold solution of hyposulphite of soda is introduced and continued until in a tested sample no more silver can be precipitated.

Precipitation.—Polysulphide of sodium is the precipitant. In the precipitating tubs the dissolved chloride of silver is mixed with a solution of polysulphide of sodium, the whole solution well stirred. The silver is precipitated as a black sulphide. This is deposited in bags and well pressed and dried, then washed in warm water in filters, dried again and heated under muffles, to which the air has access. The sulphur burns off, and the metalic silver remains. Finally, the silver is melted in crucibles, some borax and iron added.

When the right proportion of precipitant has not been used, silver remains unprecipitated. To test this, when no more precipitant is observed, some of the solution shouldbe taken into a glass tube and some drops of the solution of polysulphide of sodium added; if a black precipitate follows, too little precipitant has been used, and more must be added to the solution in the precipitating tubs; but if, on the contrary, no precipitate is produced in the glass tube, another sample of the solution must be taken, and tried with some drops of the original solution, then a black precipitate shows that too much of the precipitant has been introduced into the tubs, and some of the original solution must be added.

As the fluid is used over again in lixiviation, a surplus of precipitant would render it unsuitable, as it would precipitate silver in the mass during the lixiviation.

Buddhism in America.

An English writer says that the idea of there having existed an intercourse between Asia and America, in the earliest ages, is not new. Some travellers, judging from certain rites they had seen practised by various Indian tribes, have endeavored to prove that the lost tribes of the Jews must have found their way to the American continent by crossing Behring's Straits; and Humboldt, in his "Views of the Cordilleras," &c., points to various customs of the American tribes, the parallel of which might be found in India. Moreover, the inquiries of Orientalists have brought to light certain passages of Chinese works tending to confirm the notion of an early intercourse between the two continents. Starting from these d ta, M. Gustave d'Eichthal, the a thor of Les Evangiles, has, by a series of new and interesting researches, endeavored to cast a light on this obscure point of history, with a view to establish a link between Buddhism and the creed as well as customs of the American Indians. In his "Etudes surles Origines Asiatico-Bouddhiques de la Civilisation Americaine," just published, he first compares a bas-relief found among the ruins of the American city now called Palenque with one existing in the Buddhist temple of Boro-Boodor, in the island of Java; and it must be allowed that the resemblance of the two styles of design and execution is striking. A few of the leading facts on which he founds his theory, as the strange tortures to which the Hindoo penitents submit in order to cquire sanctity in the eyes of the people, are well known, and one of them is peculiarly characteristic. It consists in thrusting iron hooks into the muscles between the shoulder blades, and thereby suspending the penitent to one of the extremities of a long lever, turning on a pivot at a height of eight or ten feet. A similar religious practice exists among the Mandan tribe in America, where it goes by the name of "pock-hong," only it is less artistically executed, wooden pegs being driven through the flesh, and a rope attached to them; the patient being then, while suspended, made to twirl slowly round. Among the Sioux Indians a penitent will engage to look steadfastly at the sun from its first appearance above the horizon to its setting. The same practice may be found in India. The Mandans believe that the earth is supported by a large tortoise, and that the shell of the latter having been one day pierced through by some white men, water overflowed the earth and drowned the whole human race, except one man. Now the second avater of Vischnu is his transformation into a tortoise after the deluge, in order to support the earth. But the link which appears to connect the Mandans more especially with the Buddhists is this belief of theirs—that the souls that have been sent to the place of punishment are tortured there for a time, in proportion to their evil deeds, and are then sent back to the country of the blessed, in order to be again tempted by the evil spirit, and subsequently again punished as before. This creed bears an evident analogy to the various transformations which, according to the Buddhists, man undergoes in expiation of his trans gressors.

Resources of our Country.

General Banks, recently in a speech upon the appropriation of $100,000 for the World's Exposition at Paris, told some facts about the power and resources of our country truly astonishing, and such as make every true American heart thrill with pride. The valley of the Mississippi alone is capable of supporting 500 or 1,000 millions of people and still not be populared so thickly as England now is. Illinois has asked for very nearly as much ground at the Exposition as is allotted to an entire nation by the European Commissions, whose principal knowledge of us is probably derived from the London *Times*. The space allotted for the United States is 30,000 square feet, making us the 8th on the list of nations in point of space assigned; 20,000 will be used for passage ways, and the remaining 10,000 for arranging the articles upon The articles are divided into ten general groups or classes; these ten classes are divided again and again into sub divisions, so that each article will be systematically arranged amongst its own kind. Everything the mind of man can devise for exhibition will have its appropriate place in one of the sub-divisions. Mining, agriculture, manufactures, photography, wood-engraving, and all arts will be amply represented. *The United States will stand first—will take the lead in six or seven of the ten different classes.* What a sermon is this upon the energy and talent developed by free government.

California Miners.

Comstock—whose name has not been immortalized by being connected with the richest silver mine in the United States—is at present prospecting for gold in Montana. Alva Gould, the locator of the famous Gould & Curry, is cutting shingles in Washoe Valley for a livelihood. Levi W. Dodge, an old miner of Trinity county, was recently killed while working on his claim on the Trinity river. Major Downie, the founder of the city of Downieville, one of the oldest and most famous mining towns of the State, was in this city a few days since. He came from Idaho, where he has been tolerably successful, and was on his way to the Eastern States. Mr. John C. Fall, one of the oldest residents of Marysville, who located a number of mines in Humboldt District, Nevada, the builder of the first mill in that rich district, has recently returned from the East, where he has succeeded in disposing of one of his mines to great advantage, and placed himself on his feet once more.

The Hoosac Tunnel.

VISIT OF THE MASSACHUSETTS LEGISLATIVE COMMITTEE TO FITCHBURG—THE NEW DRILL, ETC.

[From the Boston Post, March 28.]

The Committee of the Hoosac Tunnel having received a formal invitation to visit Fitchburg for the purpose of inspecting the drilling machine intended to be used in boring the Hoosac tunnel, the invitation was extended to both branches of the Legislature, which was accepted. Yesterday the President of the Fitchburg Railroad placed at the service of the Legislature an extra train of six cars, which were well filled with members and other invited guests. The train arrived at Fitchburg at a quarter before eleven, and the members were met at the depot by Hon. Alvah Crocker, who conducted them to the shop of the Putnam Machine Company, where the drill had been placed in position. The company having all assembled, Mr. Crocker stated briefly the object of the visit, and introduced Mr. J. W. Brooks, Chairman of the Commissioners, who proceeded to explain, the drill and its movement. The Drill consists of the following mechanical elements:—A cylinder of cast iron, which contains a piston operated by compressed air, being admitted by a slide valve working transversely to the cylinder; through the piston passes a hollow tube or piston rod which contains the drill; at the back end of the piston rod is a nut, and around the drill rod a screw, by the rotation of which a forward movement is given to the drill in proportion as it penetrates the rock; the rotation and feed of the drill are effected by two ratchets operated by a stud, which moves in an inclined slope. In the experiment shop the drill was mounted upon an iron column about five inches diameter, but when applied to operations in the tunnel a number of those drills will be mounted upon an iron frame, which will be run forward on a railroad track. For use in the shaft the mode of mounting will be somewhat varied, the drills in this case being supported in triangular prisms, which are to be raised and lowered by means of a wire rope. The steam was applied to the machines, and the working resulted as follows: On the horizontal drill—Pressure of 30 pounds, 12½ inches in 7½ minutes. On the vertical—Same pressure, 15½ inches in 7½ minutes. A third trial gave, on the horizontal, 29½ inches in 12½ minutes. These drills have been manufactured by the Putnam Machine Company, under the superintendence of Mr. S. F. Gates, as mechanical engineer, and Charles Burleigh, the foreman of the shop. There are ten now in process of completion, and thirty-six in all are contracted for. The drills will be taken next week to the works of Harrison Loring, at South Boston, for the purpose of more thoroughly testing and mounting them for use. The mechanical engineer expressed himself hopeful of having them working at the tunnel in about five months. We learn that a drill similar in principle and containing the same mechanical designs was constructed and experimented upon by General Haupt, at South Boston, in 1860 and 1861, and that if the work had not been taken out of the hands of Haupt & Co., a number of these machines would have been actually at work in the Hoosac tunnel in 1861. The success of the drills to-day is a sure guarantee that if General Haupt had been allowed to proceed without interference, no reasonable doubt can be entertained that the tunnel would now be finished. Mr. Brooks remarked that the Mont Cenis drill had taken seven years in completion, but that his only two years. The cause of this remarkable achievement is to be found in the fact that the Mont Cenis drills and the drills of Haupt were purely original, while he had the advantage of copying from both.

Coal Statistics.

Pennsylvania holds the front rank in the production of coal among the American States. All the anthracite coal, with the exception of a little produced in Rhode Island, comes from that State. According to the census of 1860, Pennsylvania returned that year one hundred and seventy-six establishments, with a capital of $1,880,252, at a cost of $1,637,898 for raw material, (this presenting, we presume, the royalty of the owners of the mines,) employing 25,126 hands, paying annually $5,593,124 for labor, and producing 8,114,842 tons, valued at $11,869,574. This sum represents the low prices which then prevailed, and indicates the value at the mines before any charges for transportation, or any of the other items which swell the bills presented to unhappy housekeepers, are added. In bituminous coal there is more competition. In 1860, 134 Pennsylvania establishments, with an invested capital of $3,721,780, employing 4,651 hands, at an annual of $1,710,372, produced 77,269,650 bushels, or 2,690,796 tons of bituminous coal, valued at $2,876,679. This was more than one-third the product of the whole Union, which was 155,425,000 bushels, or 6,218,080 tons, valued at $8,396,063. The product of Ohio was valued at $1,653,553; of Illinois, at $1,285,501; of Virginia, at $798,128; of Kentucky, Maryland and Tennessee, each, at nearly $500,000, and small returns were also made from Rhode Island, Indiana, Michigan, Iowa, Missouri, Georgia, Alabama, Arkansas and Washington Territory. The yields of Pennsylvania in both kinds of coal was 11,049,354 tons, valued at $14,081,845, while the product of the whole country, of all the mines distributed throughout sixteen States and Territories, was 14,577,648 tons, valued at the mines at $30,570,329.

The product of the British coal fields in 1858 was estimated at 65,000,000, or nearly five times as great as the product of Pennsylvania, but the production in Pennsylvania is only partially developed

The anthracite coal regions of Pennsylvania are estimated to embrace an area of 437 square miles. They are divided into three general divisions; the northern or Wyoming region, embracing the districts of Shickshinny, Wilkesbarre, Newport, Pittston, Lackawanna and Carbondale, an estimated area of 120 square miles or 76,805 acres; the middle region extending from Shamokin to the Lehigh, containing an area of 115 square miles or 73,000 acres, and embracing the Mahony, Shamokin, Beaver, Meadow, Hazleton and many other smaller basins; and the Southern or Schuylkill coal field, containing an area of 164 square miles or 104,960 acres of workable coal, extending from the Lehigh on the east nearly to the Susquehanna on the west, and comprising the Lehigh, Tamaqua, Tuscarora, Schuylkill Valley, Dauphin and other districts.

It may not be generally known that it is less than fifty years since anthracite coal obtained any commercial value. Some was sent to Philadelphia in 1806, but on account of inexperience in its use and a want of proper grates it proved intractable as a fuel. The war of 1812 stimulated its production for a time, but only temporarily, nor was it until 1820 that the trade was fairly opened

Avoid Corrosion in Steam Boilers.

At Manchester, England, there exists an association having for its object the prevention of accidents by bursting of steam boilers. This association has under its superintendence upwards of two thousand boilers, and every possible information relating to their preservation is carefully collected, till at present they can tell the strength and probable durability of a boiler with much more precision than the physicians of a Life Insurance Company can tell the probable duration of life of any human being. This most important association have discovered that corrosion has much more to do with boiler explosions than superheated steam, or oxy-hydrogen gas. In the majority of cases this corrosion takes place on the *outsid* of the boiler, and might be avoided to a very great extent. Wherever there is the least escape of steam in the brickwork-setting of boilers, there the work of corrosion is carried on with surprising rapidity. The water generated by the condensation of steam, is an active solvent of both iron and lead. This is the reason why soft waters corrode boilers more rapidly than hard. Waters that contain acids in solution act on the inside of the boilers. But there are very few cases on record in which it can be proved that boilers burst from this cause, while the Manchester boiler association proved that forty-seven explosions occurred in England, during the year 1863, from permitting trifling streams of condensed steam to run down the sides of the boilers. The purer the iron of the plates of which the boiler is made, the more rapid will be the corrosion by condensed steam, while it has no effect on cast iron or steel. These are facts worthy the consideration of all persons owning or having charge of steam boilers.—*Jour. App. Chem.*

The Mount Cenis Tunnel.

A Turin correspondent of the Boston *Transcript* writes of the progress made in tunneling the Alps: "The entire length of the tunnel is 12,220 metres, or a little over seven and a half miles. 5,309 metres are finished; there remain 6,911 metres. At the rate of progress last year, the finishing of this will require not quite six years. Whether this rate of progress will be maintained, and whether the treasury of a government (Italy) with a deficit of a million of francs ($200,000) per day, will hold out, are questions which time alone can settle. The writer fixes the time of completion at ten years from the present time, thus allowing for slower progress as the distance increases. $1,200,000 are to be expended this year; this gives twelve millions of dollars for finishing." He adds: "At this time (February 15,) very nearly one half of the whole work is to be completed, and it may be confidently relied upon that the work will go on at a constantly increasing rate of progress. There is every reason to have perfect faith in the efficiency of the machines. We have arrived at the stratum of quartz rock. We find it sometimes solid and sometimes broken and mixed up with anhydrite (quartz). However, we have always got through this rock at the rate of 60 metres (23 2-3 inches) to 80 metres (31 1-2 inches) per day. This is on the side of Modane. I have mentioned that on the Bardoneche side we have been stopped by the cholera for two months. It is not probable, as you perceive, that harder rock can be met with (than this quartz rock); and it is not impossible that a tougher (*plus tenace*) rock may be encountered; but such an accident will no more stop the work than it was stopped when we came to the quartz rock."

Magnesium.

The manufacture of the metal magnesium is now rapidly on the increase in the United States, as well as in Europe. It is an illuminator of the most intense brilliancy, and serves the photographer better than the sun.

Magnesium is the metallic base of magnesia, the latter being the oxide of magnesium. It is found combined with carbonic acid, and when the carbon is expelled by heat, the well known calcined magnesia of pharmacy is produced. It is a silver-colored metal, malleable and ductile, fusing at a dull red heat. When heated to redness is consumes with a brilliant white flame. It oxidizes rapidly in damp air, but does not change under water or in dry air, and is reduced from the chloride: 600 parts chloride of magnesium, 100 parts fused chloride of sodium (or better, a mixture of 7 parts chloride of sodium and six parts chloride of potassium), 100 parts pure pulverized fluorspar are to be intimately mixed, and to the mass 100 parts sodium in fragments added, and the mixture projected into a hot crucible and covered. After the first energetic decomposition has passed, the fused mass must be stirred. The magnesium will be gathered in globules, and can easily be separated from the slag. It is afterwards purified by downward distillation. The metal can be drawn into fine wire, and is now extensively used as a source of light in photography. Two ounces of magnesium will produce a light during ten hours equal to that afforded by seventy-four stearine candles, of five to the pound, consuming twenty pounds of stearine.

Important Discovery at the New Almaden Mine.

It was accidentally discovered some time since, that the slag or refuse from the furnaces of the New Almaden quicksilver mines contained a noticeable quantity of gold. Samples of this refuse have been submitted to a number of assayers in this city, all of whom have returned gold, varying in quantity from $10 to $20 per ton. We have further understood that about a ton of this refuse has been sent hither to be tested by working process, the result of which will soon be known. This refuse is so thoroughly calcined and desulphurized, in the process of extracting the quicksilver from it, as to be almost entirely soluble in water, becoming completely disintegrated. Hence it will require no crushing, but may be submitted directly to the simplest amalgamating process for the extraction of the gold, which is in a perfectly free state. The cost of such a process will be merely nominal. The quantity at the works can scarcely be less than 30,000 or 40,000 tons. The discovery, if it shall be verified, will be a most interesting and important one.—*Mining and Scientific Press, San Francisco.*

Special Scientific Brevities.

☞ The Mobile *Commercial* has the following respecting the average weight of a bale of cotton: "A Liverpool paper asks the question, and says that the average bales coming from New York weigh only 330 pounds. By all means this should be traced out, for it casts a reflection upon both planter and merchant. Certainly no such bales have been shipped from this port or from New Orleans; although, at the latter place, we hear a good many tales about extensive sampling, and cotton thieves. The average weight of bales cleared from Mobile this season has been 405 pounds per bale. There is really no reason here why cotton should be packed in small bales; indeed there is every thing in favor of the larger bales."

☞ A ready way of making ozone is to take sticks of common phosphorus, scrape them until they have a metallic lustre, place them, in this condition, in a large bell jar, and half cover them with water. The air in the bell jar is soon charged with ozone, and a large room can readily be supplied with air in the ozonized state by this process. Invaluable as a disinfectant, excess of it nevertheless produces symptoms precisely like those of a cold, and the writer candidly says that its nature is as yet very imperfectly known. Properly applied, however, it will conduce to the preservation of animal food, and we commend the article to the notice of such as deal in this commodity. Glaciers and ice, climbing plants and the spectrum microscope, form topics of other papers.

☞ Rare fragments of rich old Rome are daily turning up from out of the grave of the Eternal City. The Mount Palatine has been pierced, by Papal authority, and thence have recently come to light new traces of the gorgeous Imperial Palace—frescoed chambers, superbly adorned with *bassi-rilievi*, marble columns, one or two statues, fine though mutilated, and a bust of Britannicus of the best period of art. At Ostia, discoveries equally interesting have been made; and among the vines, near the Baths of Caracalla, Monsignore Guidi has come upon a magnificent mosaic, representing a skeleton, life-size, with the inscription, in Greek letters signifying "Know Thyself." This last is supposed to be of the time of the Antonines.

☞ A patent has been taken out in England, the object of which is to preserve animal and vegetable substances. The operation is effected thus: We suppose a piece of meat to be preserved; extract from it as much blood as possible; wash it and immerse it in a solution of acetate of alumina; let it dry, and when dry put it in the following bath: gum adragant 1 lb.,

water 1½ or 2 gallons; heat twenty-four hours, stirring well, and add to it whilst hot 6 oz. gelatine, mixed with 10 oz. acetate of alumina. Set the meat two minutes in that bath, shaking all the time. Hang the meat and dry it 24 hours in a current of air. Repeat the operation two or three times if necessary.

☞ **American petroleum has been subjected to an** examination by the superintendent and chemist of the committee of the London Fire Establishment, with this result, that the raw American petroleum is a very volatile and combustible liquid, and that if stored in the vault and if it leaked from the vessels containing it, would form with the atmosphere an explosive mixture which would take fire at even a hundred feet from the package. In case of fire it would not mix with water, but would float upon it in sheets of flame. The refined petroleum, or astral oil, on the other hand, is not dangerous, unless the temperature of it rises to about 95 degrees of Fahrenheit.

☞ **It is often necessary, before re-melting cast** iron, to reduce large masses of it to pieces. This, by the method ordinarily used, is both troublesome and difficult. The *Scientific Review* says: A simple and ingenious mode of producing the required fracture has been recently used in France. It consists of drilling a hole in the mass of cast iron for about one-third of its thickness, and filling the hole with water, then closing it with a steel plug, which fits very accurately, and letting the ram of a pile-driver fall on the plug. The first blow separates the cast iron into two pieces.

☞ **The Pittsburgh people are trying to discover** some practical way of consuming the smoke from their manufactories, which hangs over their city like a London fog. One gentleman claims to have a solution of the question in an application of the same principles as those governing petroleum lamps, where the formation of smoke and soot could not be prevented with a strong draft was obtained and the air admitted in small jets, heated by the metallic casing surrounding the wick.

☞ **To make gold and silver inks:** Take 1 oz. honey and 1 oz. gold or silver in leaf; grind them together thoroughly. When the gold or silver is in the finest possible state of division, mix with about thirty times its weight of water; allow it to settle; pour off the water; repeat the operation two or three times; dry the powder. To use it, mix it with sufficient quantity of gum water.

☞ **The works of Mr. Krupp, in Prussia, the** largest steel-maker in the world, in 1852, produced 68,000 tuns; in 1861, the production was 454,000 tuns, and in 1865 the works turned out nearly 2,500,000 tuns of steel. This immense establishment contains 350 casting places and muffles, 136 steam-engines, 31 steam-hammers, and other appointments in like proportion.

☞ **English engineers have recently been in Paris** to obtain the authorization of the French Government to have soundings and measurements made on the French coast, with reference to the construction of a tunnel from Calais to Dover. The distance would be at least thirty miles. It appears to be an impossible engineering problem, but the Mont Cenis tunnel is cited in support of the feasibility of the scheme.

☞ **A novel idea was recently carried out by an** individual in Philadelphia. Desiring to have a picture of his father constantly before him, he took his watch to a jeweler, had the dial removed, and the likeness photographed upon it. Porcelain pictures have been taken for some time, but this is a new phase of them.

☞ **A chemist of Hamburg reports that he has** discovered traces of copper, and, in some cases, of lead, in the remains of animals. He has found copper and lead in human flesh, and copper in the intestines of beasts of prey, in beer, in poultry, in hens' eggs, in fish, crustacea, insects, spiders, and snails.

☞ **One hundred pounds of pure clay absorb seventy** pounds of water, while the same weight of pure sand absorbs twenty-five pounds; clay loam absorbs fifty pounds; chalk, forty-five; loamy sand, forty; and calcareous sand, twenty-five. Cubic yards of soil required to cover an acre four inches deep, 538; six inches, 807.

☞ **An amateur Microscopical Society has been** formed in London. At a late meeting Mr. Richard Beck read a paper on the "Spiracles, or breathing apparatus, of insects," which he illustrated by some enlarged diagrams. Mr. M. C. Cooke contributed a paper on "Six new forms of microscopical fungi."

☞ **By the simple invention of molding common** bricks, with dovecasiled grooves in various ways, by means of which they can be more firmly cemented together, a decided improvement in the construction of brick walls appears to have been secured at little or no additional cost.

☞ **Acid for galvanic batteries is made thus:** Take 2 fluid ounces of sulphuric acid, 1 ounce nitric acid, and 5 ounces water. Mix. It should be tried by dipping into the mixture a sheet of zinc, and a continuous succession of small bubbles should be produced.

☞ **Coal oil is a better article for preserving** sodium and potassium than naptha. In coal oil, sodium keeps its lustre for months and years, while in the purest naptha it is dimmed in a few days.

☞ **A balloon train, to ply between the Place de** la Concorde and the Champs de Mars, is spoken of as one of the schemes to be tried during the great gathering in Paris next year.

All Sorts.

☞ **We have mentioned several times,** says the Wabash *Express*, the progress of boring an oil well at Lodi on the Wabash, some forty miles north of this city (Terre Haute). A few days since the augur broke through the roof of a cavity. The augur was taken out, when the gas began to come up in considerable quantities, pushing the salt water before it, causing it to flow over the conductor. After the salt water was driven out, sulphur water continued to flow in a small stream. The well was sunk four feet deeper, which opened new cavities, and the water increased to ten gallons a minute, and it is now flowing five hundred barrels a day of white sulphur! The water as it flows from the conductor is white; after standing awhile it deposits a white sediment and becomes clear. On being agitated it boils and emits gas. In mineral ingredients, disagreeable smell, and specific gravity, it is said to exceed the Lafayette Artesian—especially the sulphurous odor—and it is claimed it will rank with the most famous medical waters of the world. The company, we understand, will cease boring until the water is analyzed and tested.

☞ **Animal grafting is the name given to a new** branch of science which is now extensively studied and experimented on by the savans of France. One of these gentlemen, Dr. Berl, in a paper forwarded to the Paris Academy of Science, stated the result of his observation. He says "that if the tail of a rat be cut off, skinned, and then inserted under the skin of the same animal, it will continue to live and grow as before. If a fracture be effected the fractured parts will join again exactly as they would if the tail were in its natural place; in short, both physiologically and pathologically the grafted part follows the general laws of nature."

☞ **Messrs. Hooper, Morrill, and Allison,** of the Ways and Means Committee, have been in session for three days upon a tax bill, and have adopted an entirely new cotton bill, changing and simplifying the mode and manner of collecting, so as to prevent the government being defrauded in its operations. They have decided upon a long list of articles to go on the free list. Among them are coal of all kinds, freight, clothing, gold-leaf, etc. The question of reducing the tax on crude petroleum has not yet been decided, neither has there been any decision in regard to the income tax. This bill, it is expected, will be reported this week.

☞ **An explosion lately occurred at the blast fur**naces of J. P. Hickman, Graveland Ironworks, Tividale, near Dudley, England. A furnace was about to be tapped, when one of the tweers, through which the blast is conveyed into the molten metal, burst, and the water, which is contained in the tweers to keep them from melting, at once bursting into steam, forced out a quantity of the melted iron upon the men employed at the furnace. Two men were so dreadfully burnt that they died the next morning, and two more received very serious injuries.

☞ **The diving bell has been abandoned on the** Thames in favor of the diving bell dress, principally because the men employed were found, while the Westminster bridge was being built, to spend their time at the bottom in playing cards, and there was of course no effectual means of keeping a check on them. It is not easy to play cards in a diving dress alone, however, and the remedy has proved very satisfactory in its operation.

☞ **The manufactures of Buffalo,** for the year 1866, were as follow:—Iron, $5,377,969; other metals, $303,744; machinery and implements, $526,915; manufactures of wood, $889,414; articles of wear, $1,276,704; miscellaneous, $1,863,291; spirits and liquors, $1,363,256; petroleum, $722,777; total manufactures of 1865, $14,324,070. These figures are very nearly double that appear in the census report of 1860.

☞ **A valuable present from the Tycoon of Japan** to the Emperor Napoleon has reached Marseilles. It consists of no less than 15,000 cases of silk-worms, the more prized inasmuch as it has been clearly proved that Japanese silk worms produce a superior quality of silk to those of any other country, and are, moreover, less liable to the disease which has of late years caused so much distress to the silk growers of the South of France.

☞ **Every morning we enter upon a new day which** carries a yet unknown future in its bosom. Thoughts may be born to-day which may never expire; hopes may be excited which may never be extinguished; and acts may be performed to-day, the consequence of which cannot be realized till that day when "the secrets of all hearts shall be made known."

☞ **Lord Coke wrote the following,** which he religiously observed: "Six hours to sleep, to law's great study six, four spend in prayer, the rest to nature fix." But William Jones, a wiser economist of the fleeting hours of life, amended the sentiment thus: "Seven hours to law, to soothing slumber seven, ten to the world allot, and all to heaven."

☞ **The offical statement of the Secretary of** State of Nebraska, respecting the special census taken a year ago, shows the population then to be over 40,000, and estimated at least 55,000 now. This corrects the mis-statement made in the senate on the Colorado question, that Nebraska has only 26,000 population.

☞ **The Vermonters are in special good spirits** because at the late international exhibition, at Hamburg, a Green Mountain sheep carried off the prize. This splendid animal "Gold Drop" by name, furnished from a single shearing twenty-seven pounds of wool.

☞ **Stones were first used for bullets; iron ones** are first mentioned in 1540. Leaden bullets were made before the close of the sixteenth century. Stone cannon-balls are still used in Asiatic countries.

☞ **It has been ascertained by means of the Si**rene that the wings of the mosquito vibrate at the rate of 15,000 times a second.

☞ **The probable production of bullion in this** country during the current year is estimated at $200,000,000.

☞ **It is estimated that 18,000 elephants are** yearly killed to supply Sheffield alone with ivory.

☞ **A female artist is said to gain a decent liveli**hood in London by painting black eyes.

Patent Claims.

INTERESTING TO MINERS, MILLMEN, METALLURGISTS, OIL-MEN AND OTHERS.

The following claims have recently been issued from the United States Patent Office:

53,767.—Constructing Wells.—E. S. Alvord, Milford, Del.:

First, I claim the combination of the driving pipe, A, the inclosed short pipe, C, and the pump tube, B, arranged substantially as above described.

Second, I also claim the combination of the short pipe, C, the pump tube, B, when surrounded by gravel or other analogous filtering material, arranged substantially as set forth.

[The object of this invention is to construct a well by sinking or driving tubes into the ground, and forming at the bottom a cavity, the lower part of which is filled with gravel or other filtering material, to prevent dirt from entering the pump when it is operated.]

53,779.—Artificial Fuel.—James F. Buckley, Brooklyn, N. Y. Antedated March 30, 1866:

I claim prepared charcoal saturated with whiskey, volatile oils and a glutinous paste formed into blocks, as a cheap, aromatic, artificial fuel for common uses.

53,794.—Car for Transporting Petroleum.—James and Amos Densmore, Meadville, Pa.:

We claim the two tanks, B B, attached to the platform of the car, A A, by means of the frame work, C C C C, and C C C C, together with the bolts, 1 2 3 4 and 1 2 3 4, directly over the trucks when the same are constructed in the combination as hereinbefore described, and for the purposes set forth hereinbefore, or any other mechanical construction, substantially the same and which would produce the same results.

We claim the combination and application as entirely new, and as a valuable and useful improvement.

53,802.—Well Borer.—F. Fohr, Rowlesburgh, West Virginia:

I claim the use of a double connection between the sinker and drill, such for instance as the spring clamp and screw, or any other equivalent connection, for the purposes set forth.

[This invention consists in the combination of a spring catch or clamp with the sinker and drill of a well borer, in such a manner that a double connection between the drill and sinker is obtained, and if the screw or ordinary connection breaks, the drill is raised by the catch and prevented from being wedged into the hole.]

53,805.—Amalgamator.—Willard Monroe Fuller, Chicago, Ill.:

In an apparatus for extracting gold and silver from quartz, constructed substantially as herein described, I claim surrounding the amalgamating kettle with an annular chamber, the central space of which shall form the fire chamber of the apparatus, the said annular chamber being so arranged in relation to the kettle that the quartz or tailings may be drawn off simultaneously from all points of the circumference of the kettle, substantially as and for the purposes herein set forth.

In an apparatus as above described, I claim connecting the said annular chamber with a receiving chamber into which the quartz or tailings flow, which said receiving chamber may be organized for continuous or intermittent action, substantially as herein described.

In combination with the apparatus herein described, I claim the valve placed in the feed or hopper, and constructed and arranged substantially as set forth for regulating the flow of the ore into the kettle.

In apparatus constructed and operating as set forth, I claim the combination and arrangement of valves whereby the automatic discharge of the tailings may be effected.

In apparatus constructed substantially as set forth, I claim making the doors and flues which lead from the interior of the vessel to the outside thereof, of an O G shape, that is to say, with inclined surfaces to deflect the tailings and prevent the possibility of its accumulating and choking up the apparatus.

53,829.—Oil Tank.—Joshua K. Ingals, New York City:

First, I claim the means of relieving the pressure within the tank or vessel, substantially as described.

Second, I claim the jointed arm, c, or any equivalent device operated to regulate or adjust the pressure within the tank or vessel.

Third, I claim the strainer or sprinkler, T, arranged as shown and operated in connection with the relief pipe, as described.

53,885.—Apparatus for Separating the Precious Metals from other Substances.—Van Buren Ryerson, New York City:

I claim the pan with the bottom formed with recesses, substantially of the form herein described, in combination with the means or the equivalent thereof, for giving reciprocating motions, substantially such as described.

53,903.—Furnace Grate Bars.—George O. Tupper, New York City:

I claim the furnace grate bars, the rib or lower part of which is corrugated longitudinally, with one or more corrugations on each side, substantially as herein described, and for the purposes set forth.

53,894.—Door for Puddling and other Furnaces.—Nathaniel L. Libby, Boston, Mass., and Benjamin Shiverick, Waltham, Mass.:

In combination with an iron door we claim a lining of calcined plaster, gypsum, or other material which conducts heat slowly, made either solid, or with an opening or air space, as may be preferred.

We claim a nose piece or guard around the hole in the door made separate from the door and fastened to it.

We claim making the lining of the door to cover and protect, or partially cover and protect the nose piece or flange around the hole in the door, substantially as described.

We claim in furnace doors a lining made of plumbago or crucible material, to protect the door and intermediate lining from intense heat.

We claim the combination and arrangement of the iron plate, A, lining, J, and lining, K, substantially as described.

We claim making the lining of furnace doors in one piece of white clay fire brick crucible material.

We claim fastening the lining to the iron plate by the bars of metal, L L, substantially as described.

We claim the holes in the door in combination with the lining for the purpose specified, substantially as described.

53,914.—Transmitting Power.—Jacob Woolf, Burr Oak, Mich.:

I claim the shaft, B, the arms, G G, with the shafts, H H, and weight boxes, K K, arranged substantially as described, and operating either by pulleys, E, E and I I, and belts, or by toothed gearing, or by any device to accomplish the same end, so as to cause the weight, K, or their equivalents to be thrown out of balance in such a manner, that one shall be constantly further from the axis of the shaft, B, than the other, and thereby aid it in its revolution, as and for the purpose set forth.

53,915.—Rotary Engine.—Henry J. Behrens (assignor to himself, Henry C. Dart, and Edward Dart), New York City:

First, I claim the concentric fixed hubs, recessed substantially as described, in combination with the two-geared shafts, their attached pistons and the cylinder, substantially as herein set forth.

Second, The pistons attached to the facing sides of the two disks, secured to their respective shafts, and so arranged that the piston or pistons of one shaft work against the face of the disk of the other shaft, substantially as herein described.

AMERICAN
Journal of Mining.

[ILLUSTRATED.]

GEORGE FRANCIS DAWSON,
EDITOR.

By publishing contributions, the JOURNAL OF MINING *does not necessarily endorse the positions assumed by contributors.*

OFFICE, 37 PARK ROW, NEW YORK.

Published Every Saturday Noon.

TERMS:

SUBSCRIPTION.		ADVERTISING.	
Per annum, one copy -	$4 00	One line [Nonp.] 1 inser'n.	$ 30
Six months, one copy -	2 25	One Square, 10 lines, one do	2 00
Three months, one copy -	1 25	One Square, do. four do.	5 00
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AGENTS.
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☞ The AMERICAN NEWS COMPANY is authorized to receive orders from city and country dealers for the JOURNAL OF MINING.

NEW YORK, SATURDAY, APRIL 21.

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MINERAL AND OTHER ON-DITS.

For Europe.

At the request of numerous subscribers, we shall in future have an edition of the JOURNAL ready early on Saturday morning for the European mail. The non-arrival of the California steamer renders the summary of mining news for that State meagre this week. The news from the Territories is not quite so full as usual, but in a few days this defect will be remedied.

THE MINING INTEREST.

There are few people who can realize the importance of the mining interest of the United States. They can scarcely believe that one third of all the manufacturing business of the country is centred in mining operations; that one-third of that vast amount of capital, which is enumerated by the million, is devoted to the extracting from the earth its mineral wealth. Yet such is the fact. It requires no prophetic ken to discover that an interest so vast—an interest whose ramifications spread throughout so many States and Territories, whose products are so multifarious, whose proportions are so grand, will become at no distant day the dominant interest of the country. To truthfully represent this interest, and to fearlessly advocate its claims, constitute the great aim of this JOURNAL. To conduct it in such a manner as to be thoroughly honest and impartial to all the varied branches of mining business, is the noblest ambition we have. This great field of human industry is alike interesting and instructive to us. It is our object to advance and promote the best interests of every man who labors in it. The oil-borer is ever welcome to these columns to tell the world of the vast supplies of illuminating and lubricating wealth collected in the great reservoirs found beneath the incrustation of the solid globe. The maker and miner of iron can freely expatiate herein on the great interest he represents. The coal interest shall occupy a prominent position; while copper and lead come up in solid phalanx to strengthen the group. The gold and silver mines of our country are so great, and so widely disseminated, that they almost demand an organ to represent them alone.

It is not to be supposed, however, that this journal is in the slightest degree exclusive. Let every man interested in any kind of mining, anywhere, at any time, forward us reliable facts in relation to his peculiar department. Drawing in this manner from every source, and from every part of the world—sustained by those, for whose best interests we are laboring, the journal will present a vast body of reliable intelligence concerning mining, at once valuable to the scientific world and interesting to the public at large. No partiality shall at any time be shown in favor of any locality or any branch of the mining business, and no jealousy will ever be originated or fostered in these columns. Devoting the entire energies of the JOURNAL OF MINING, in this manner, to the furtherance of the Mining interest, with a full sense of the dignity and responsibility of its position as an impartial chronicle of the times, with an abiding faith in the future and an unbounded love for every part of our country, we use our best endeavor to make the JOURNAL worthy of the confidence and support it has so generously received. If any interest appears to be neglected, the fault will not be at our door, but with those who fail to furnish us facts for publication. If any State or Territory has not received its full share of attention, it will never be said that we are to blame.

NATIONAL MINING CONVENTION.

This affair has proved a failure. Not a solitary delegate from any mining State or Territory entered an appearance at the Cooper Institute on Wednesday last. Mining men took no interest in it at all. A brief allusion to the affair in our last issue endowed it with an ephemeral existence, but it was speedily snuffed out by the *Tribune* in the following few lines:

"The National Mining Convention, which was to have been held at an early day, has been posponed until some date hereafter to be announced during the ensuing winter."

Many believe that the necessity for this convention never existed, save in the fertile imagination of its visionary authors. One thing is very plain—that if it ever did exist the present is not the time to hold it. Spring has come, and instead of wasting time in the gasconade of a "convention," every miner wants to be at work on his mine. Operations are now projected and prosecuted with vigor. Every mining district in the country is alive with industry. Every mine begins to ring with the music of work. Hope and vigor are renewed, and, instead of talking, the people feel like working. We rejoice to see these indications of returning prosperity, and trust to hear no more of such ill-digested schemes, which are in the highest degree prejudicial to the mining interests of the nation. People engaged in mining are anxious for results. They are surfeited with big stories—they are tired of gaudy prospectuses—they are sick of making fortunes only on paper, and they are emphatically disgusted with "National Mining Conventions." When the proper time comes, and the right men take hold of the matter and push it through, irrespective of the pressure of selfishness, then and not till then shall we favor the holding of a national convention of miners. For the present let everybody interested in mining work. Let every energy be bent upon the development of the mines, and the future is certain to be great, beyond the most sanguine expectation. Let our people make this year the most notable in the annals of mining for activity, prosperity and success.

THE BROADWAY AIR-LINE.

We heard the project of the proposed elevated railway above Broadway enthusiastically advocated at the association for the promotion of art and science, the other evening. The plan is this: To erect light ornamental cast-iron pillars at intervals on each side of Broadway along the edge of the foot path—on the top of these pillars iron girders stretch across the street, and upon these four lines of rails are laid. The carriage wheels, which are made of an extra width, run on the rails, the carriages being suspended from the axles. The carriages can be run either by a dummy engine or in trains. They are made very light, as they run through the air instead of on the ground, and have not any concussion to withstand. A light platform stretches beneath them to prevent any dropping of ashes or moisture on the road beneath. The promoters urge that the light ornamental pillars, with awnings stretched therefrom to the houses in place of the present irregular awning fixtures, would improve the appearance of Broadway; that the construction of the railway would not, to any serious extent, interrupt the present traffic; and that the traffic on the elevated line would be altogether in addition to, and leave undisturbed, the present traffic arrangements.

NITRO-GLYCERINE.

The public mind had scarcely recovered from the shock it received from the news of the terrific explosion at San Francisco, caused by this substance, before we are again startled by the account of another at Aspinwall, whereby fifty lives were lost. The British steamer "European," having on board some 200 cases of this dangerous compound, arrived at Aspinwall a few days ago. In removing the cargo, an explosion took place, which destroyed a large amount of property, including the wharf of the Panama railroad, besides causing the above frightful loss of life. Some days ago the New York city authorities, at the urgent solicitation of many citizens, took steps to ascertain what amount of nitro-glycerine there was in the city, and it was discovered that a large amount was stowed here, there being 300 pounds in one bondedwarehouse. Steps should be taken at once to remove this substance entirely from the city.

NEW OVERLAND MAIL.

From the 16th inst., the Holliday Mail and Express Company will run a daily mail from Topeka, Kansas, the present terminus of the Pacific Railroad, to Denver, by way of the Smoky Hill route. The overland mail, by the Platte route, has been so overloaded with letters, that it has for two years been impossible to get a transient newspaper through unless by the payment of full letter postage. We fervently hope that this discriminating and obnoxious feature will now be cancelled. The Smoky Hill route is a good one, and was opened not long since as a stage road by Butterfield's Overland Despatch, now a part of the new organization the two companies having recently consolidated.

Important Enterprise.

We understand that it is the intention of the Golden City Mineral and Land Company of Boston—to whom Hon. W. A. H. Loveland has disposed of some of his iron and coal lands about Golden City, Colorado—to erect rolling mills on their property for the manufacture of iron for the use of the Pacific Railroad and the mining States and Territories. As soon as we learn further particulars concerning this enterprise, we may allude to it again.

Hoosac Tunnel Drill Machines.

Fresh endeavors are being made for completing the Hoosac Tunnel, on the line of the Troy and Greenfield Railroad. An excursion was made by the Legislature of Massachusetts to Fitchburg, a short time ago, to inspect the working of new rock-cutting Powder Drills, intended to carry out that work. The rock operated upon was granite, taken from Rollstone Hill, Fitchburg, which is said to be harder than the Hoosac mountain rock. It is reported that the horizontal machine worked at 30 pounds pressure, and drilled a hole $1\frac{3}{4}$ inches diameter, a distance of $15\frac{1}{2}$ inches, in $7\frac{1}{2}$ minutes. The vertical machine, with same pressure and drill, penetrated $18\frac{1}{2}$ inches in $7\frac{1}{2}$ minutes, and that the horizontal on a second trial drilled $29\frac{1}{2}$ inches in 12 minutes; it struck 200 times in a minute.

Mint and Land Office in Idaho.

An effort is now being made in Congress, which will doubtless be successful, to remove the Branch Mint now located at Charlotte, N. C., to Boise City. Also, to open a new land office at the same place.

Appointments for Colorado.

President Johnson has been pleased to appoint, and the Senate to confirm, Moses Hallett as Chief Justice; Uriah B. Holloway, Marshall; and Frank Hall, Secretary of the Territory.

Original Papers.

WRITTEN FOR THE JOURNAL OF MINING.

PETROLEUM.—Number Four.

By FRANCIS E. ENGELHARDT, Ph. Dr., Professor of Chemistry in St. Francis Xavier's College.

According to chemical investigation, Petroleum consists of a mechanical mixture of several oils called "Hydro-carbons." These have, as their chemical constituents, the two elements, carbon and hydrogen, combined in different proportions in the different hydro-carbons. They differ in their volatility, which ranges from 119 to above 500 degrees Fahrenheit. By a fractional distillation, they may be also more or less perfectly separated from each other. Moreover, Petroleum generally contains (as I have already stated in the first number of the JOURNAL OF MINING,) neither Benzol nor any of its homologous hydro-carbons, if we except the Canadian Oil investigated by C. Scholemmer, Esq., and the Petroleum of the kingdom of Burmah, investigated by De la Rue and H. Müller.

The French chemist, Dumas, says that the hydrocarbons constituting the Petroleum series are identical with those that may be artificially produced by the compression of illuminating gas from oil.

The chemical analyses of the Petroleum of Anicano, in Italy, gave from 85.30 to 87.21 carbon, and from 12.79 to 13.40 hydrogen, the Persian Petroleum from 82.02 to 86.43 carbon, and 12.13 to 14.29 hydrogen, and the Bechelbronner Petroleum, of Germany, from 88.30 to 88.50 carbon, and from 11.50 to 12.15 hydrogen.

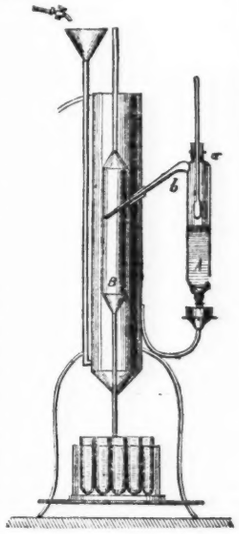
The Trinidad Bitumen series of hydro-carbons are:

C 4 H 5.	C 10 H 9.	C 16 H 15.
C 5 H 4.	C 11 H 10.	C 17 H 16.
C 6 H 5.	C 12 H 11.	C 18 H 17.
C 7 H 6.	C 13 H 12.	C 19 H 18.
C 8 H 7.	C 14 H 13.	C 20 H 19.
C 9 H 8.	C 15 H 14.	C 21 H 20.
		C 22 H 21. Parafine.

While those of the Coal Tar series (Coal Tar distilled from coal) are:

C 12 H 6	Benzol boiling point	177° F.
C 14 H 8	Tolnole " "	230° F.
C 16 H 10	Xylole " "	263° F.
C 18 H 12	Cumole " "	290° F.
C 20 H 14	Cymole " "	341° F.

Comparing the two homologous series of the hydrocarbons derived from Coal-tar and from Trinidad Bitumen, we find the following differences. The Coal-tar series commences with 12 carbon and 6 hydrogen, and goes up to 20 carbon and 14 hydrogen, while the Petroleum series commences with 4 carbon and 3 hydrogen, and goes up to 22 carbon and 21 hydrogen. In the Coal-tar series we have even numbers of atoms, which increase 2, both in carbon and hydrogen atoms, in every one of the following members of the series, while the Petroleum series commences with 4 carbon and 3 hydrogen, and increases only one atom in each of the following members.



For all commercial purposes, it is sufficient to determine the quantity and boiling point of the different oils contained in Petroleum. For this purpose, the following apparatus, by W. Regnault, may be employed.

It consists, as the diagram shows, of copper retort, A, provided with a tubulature, *a* for the thermometer. The neck of the retort, *b*, enters a condenser, B, which latter is surrounded by another cylinder, *c*, of brass, for the reception of the cold water. The inner cylinder terminates, at the top and bottom, in narrow, open tubes. At the base are five graduated glass cylinders, to receive the oil that distills over.

The retort is filled with about three ounces, or better, with 100 cubic centimeters, of crude oil, and may be distilled either by alcohol or gas. Observing the temperature as indicated by the thermometer, we collect, in the first little glass cylinder, all the oil that distills over below 212° Fahr., in the next, that between 212° and 250°, in the third, that between 250° and 300°, in the fourth, that between 300° and 320°, and in the fifth, that above 320° After the entire distillation is finished, we examine our graduated cylinder, and know, at once, the amount of the different oils in the crude material.

Crude Petroleum is lighter than water; its specific gravity is between 0.820 and 0.890. The color varies; some is nearly colorless, while other kinds are perfectly dark. Its smell and consistency show nearly as great variations.

Parafine, of which our parafine candles are made, is contained in most of the Petroleums in various quantities.

The Asphaltum varieties contain, besides carbon and hydrogen, another element, namely, oxygen, and it is supposed that these varieties were formed from the oil by coming in contact with the atmosphere, whereby the more volatile oils escaped into the air, and the remainder took up oxygen and solidified.

The main features in the purification of Petroleum and similar substances are the following: the oils or asphaltums, as they come from the wells, are put, in sufficent quantity, into an iron retort, capable of holding a thousand gallons. The form of the retort is various. To prevent the retort from bursting, it is so set into the bricks that the flame of the fire cannot come in direct contact with it. Connected with the retort is first a pipe for the introduction of steam, reaching nearly to the bottom of the vessel, and ending in a coil which is perforated below; secondly, a funnel tube, through which oil may be poured in, if necessary; thirdly, a condenser in a cooling tube, through which the oil passes into the barrels after distillation. When the connection between the various parts is perfected, both fire and steam are applied, and the distillation shortly commences As soon as the first oil comes over, an about equal quantity of crude oil is introduced through the funnel tube, till the retort has received, in this manner, the same quantity as at its first filling. Then the flow of oil is stopped, and the operation shortly after is ended. About from ten to twenty per cent., according to the quality of the crude oil or asphaltum, remains in the retort, forming a kind of coke.

The oil thus distilled is divided into two parts, according to its specific gravity. All that is below 0.843 specific gravity is kept as the lighter, all that is above as the heavier oil.

The next step in the rectifying of Petroleum is the washing of the two oils with sulphuric acid, water, and caustic-soda and water.

To accomplish this part of the operation well, some skill is required in adding the exact quantity of acid, since if too much is added the oil will be partly "shared," and if too little, will remain impure. The washing of the oil is effected in large iron tanks. From five to ten parts of acid are mixed with about one hundred parts of oil, the fluids being constantly stirred. After the two fluids are perfectly mixed, the manufacturer allows them to rest during from eight to ten hours for the separation of the acid and other impurities, then the latter are drawn off, and the oil washed thoroughly with water to free it from the adhering acid and impurities. Next, it is agitated during several hours, with from five to ten parts of caustic-soda, by measure.

After the settling of the liquids is accomplished, which may require from ten to twenty hours, the soda solution is also drawn off, the oil once more washed with water, and so prepared, is filled into the same retort, or another one a little smaller, for a second distillation. At this second distillation, all the oil that comes over with a specific gravity of 0.739, or below, is collected by itself, and known under the name of Benzin. The second portion, or that which distills over with a specific gravity of 0.739 to 0.819, is the lamp oil and the last oil, or that coming over with a specific gravity above 0.819, the heavy, or lubricating oil.

Having thus given an outline of the refining process, it remains for me to say a few words in regard to the various varieties of bituminous matters found native in our soil, adding, at the same time, the uses thereof.

There are found about nine varieties of bitumen. 1st. Liquid Naptha: It has a yellow color, strong odor, takes fire even on the approach of a lighted taper, and burns with a bluish flame. It occurs in Asia, Europe and America. The purest naptha comes from Monte Ciaro, near Placenza, in Italy. It is used under the name of Belton's British Oil, for strains and rheumatism. The Persians and Russians take it as a cordial, and by most of the inhabitants of Asia, it is employed in lamps for light

Mr. Macintosh, of Glasgow, first used India rubber, dissolved in naptha, to render textile substances, such as cloth, etc., waterproof.

Moreover, naptha is an ingredient in different varnishes, and chemists employ it for the preservation of potassium and sodium.

2. Petroleum: Since I have already mentioned the properties of Petroleum, I shall now only enumerate its uses. It is employed for the manufacture of illuminating gas and parafine, for vulcanizing India rubber, for cleaning pictures, for fuel, for dissolving sulphur, phosphorus, camphor, resinous substances and wax, as a remedy against cutaneous diseases, for artificial light, as a lubricator, and finally, in the manufacture of soap for washing purposes.

3. Mineral tar: This substance is said to be merely Petroleum, containing asphaltum in a state of solution. It has a glossy, black color, and is more glutinous than the two first-named varieties. Among all the different kinds of Petroleum, the mineral tar was most used by the ancients as a cement for buildings which withstood, for so many centuries, the ravages of time. At present it is employed in France for the manufacture of mastic, a bituminous, resinous cement, in which the ingredients, consisting of mineral tar and some calcareous rocks, are mixed either naturally or artificially. This mastic cement yields to pressure, is not liable to crack, is impervious to moisture, and therefore, in many cases, much more durable than either stone or metal. It may also be employed, with great advantage, in the construction of water ways, sluices, cisterns, terraces, fortifications and roofing of houses, since it is anti-electric. Cellars and buildings constructed under the ground with this material, will not alone keep dry, but even no danger of fire need be apprehended, since it never ignites. Metallic pipes or plates, especially those employed underground for

aqueducts or sewers, varnished with mastic or mineral tar, will become nearly indestructible by rust.

4. Asphaltum: Asphaltum is nearly without odor, brittle and solid. It inflames and melts easily, and burns, leaving, when pure, no residuum. The uses of asphaltum are numerous, among which I may mention the impregnation of sandstone, flags and bricks, the asphalting of roads, streets and pavements, the coating of electric telegraph wires, cisterns, walls and ships, the construction of so-called asphaltic-mosaic—for example, the Place de la Concorde, in Paris—the production of gas and oil, as fuel, and finally, the lining of coffins, since this bituminous substance is, in a very high degree, antiseptic. This is illustrated, as related by Major General Halleck, by a body found near the asphaltic lake of Trinidad, in the year 1818, so remarkably well preserved, that it was supposed to be the body of a man lately murdered. At the judicial investigation, however, it was proved to be that of a man who had been buried for nearly twenty years.

Of the softer varieties I shall only give the names, since their occurrence is very limited, and their uses unimportant.

Of the refined Petroleum oils, the benzin has been substituted for turpentine in mixing paints, as also in the manufacture of varnishes. It is also used for removing grease spots from woolen cloths and silks, and it may, moreover, be employed in tracing and copying drawings.

Value of Mining Products.

Arranged for the JOURNAL OF MINING from U. S. Census Reports, 1860, by DR. R. P. STEVENS.

Asphalt	$	10.000	Nickel Ore	35.000
Barytes		25.000	Ochre	1.000
Coal (Anthracite)		11.860.000	Oil (Coal)	4.254.000
" (Bituminous)		8.574.000	" Stones	2.000
Copper		3.561.000	Paper Clay	7.000
Chrome		15.000	Plaster	1.110.000
Clay		105.000	Plumbago	53.000
Cement		767.000	Potters' Clay	34.000
Corundum		3.000	Quicksilver	382.000
Emery		50.000	Salt	2.400.000
Fire Clay		3.000	Sand	132.000
Foundry Facings		105.000	Scythe Stones	16.000
Gold		47.163.000	Silver	1.040.000
Grindstones		67.000	Slates	287.000
Iron		7.723.000	Steatite	27.000
Manganese		5.000	Sulphur	135.000
Marble		16.000	Water Lime	928.000
Moulding Sand		13.000	Whetstones	15.000
Nickel and Cobalt		81.000	Zinc Ore	72.000

NEW MINING COMPANIES.

ARABIA CONSOLIDATED MINING COMPANY. CAPITAL STOCK, $1.000.000; 10,000 SHARES OF $100 EACH; TREASURY STOCK, $500,000.

According to the prospectus of this Company, "the mining property is situated in Humboldt county, Nevada, in that part of Trinity District known as Arabia, and about four miles West of the Humboldt River, and within probably two or three miles of the line of the Central Pacific Railroad, which passes up the Humboldt Valley. It consists of twenty-seven silver lodes, one of which (Montezuma) is 1.200 feet long and 15 feet wide; another (Orcua) 1.500 feet long and 2½ feet wide; and two parallel lodes each 2,100 feet in length and 2 feet in width. The remaining twenty-three lodes are each 3,000 feet long, and from one to four feet wide; and are contained in three Tunnel Claims, which constitute an area, 3.000 feet in length by 2,400 feet in width, and containing a little over 165 acres." Further information may be had from H. C. Gardener, 139 Broadway, New York.

UNITY GOLD MINING COMPANY OF COLORADO. CAPITAL STOCK, $100,000; WORKING CAPITAL, $50.000; SHARES, $1.00 each. Marquis B. Spalding, Secretary.

The property is 9.000 feet of Lode claims in Gilpin and Clear Creek counties; and two tunnels in the last named county. Office, 2 Astor House, Broadway, N.Y.

TEXAS GOLD MINING COMPANY OF COLORADO.—CAPITAL STOCK $500,000; 50,000 SHARES OF $10 EACH.

The property of this Company is located in the City of Black Hawk and its immediate vicinity, Gilpin county, Colorado, and on the well known Bob Tail, Fisk, and other lodes. Company's office, 155 Broadway, New York.

BLACK EAGLE SILVER MINING COMPANY OF NEW YORK.—CAPITAL STOCK $350.000; 7,000 SHARES OF $50 EACH.

The prospectus of this Company says the mining property is located in Carson District, Owyhee county, Idaho Territory, and consists of 533 feet discovery claim, to which, on subsequent examination, was added 600 feet, equally as good as the discovery, and recorded as the first northerly extension, making in the aggregate, 1,133 feet on the course or direction of the vein. Office of the Company, 40 Maiden Lane, New York.

INCAS SILVER MINING COMPANY OF COLORADO.—INCORPORATED UNDER THE LAWS OF MASSACHUSETTS. CAPITAL STOCK $300.000; SHARES $1.00 EACH.

The prospectus states that the silver mines belonging to this Company, situated in Summit county, Colorado, consist of 7,200 feet of silver mining claims, with 1.000 feet of water power, also, gold mining claims in Independent District, Gilpin county, of 7,400 feet. Company's office, 19 Lindall street, Boston

VULCAN IRON COMPANY.—CAPITAL STOCK $1,500,000; SHARES $10 EACH.

This Company have acquired by purchase and lease, several valuable mining properties, 752 acres in all, in Morris county, New Jersey, in the vicinity of Dover, fifty miles from the city of New York, on the line of the Morris and Essex Railroad, and near the Morris Canal. Its object is to mine for and procure iron ore and other metallic ores, and to mine for and procure coal, and to quarry and procure limestone, and to manufacture and procure iron and steel. Office, 57 Broadway, New York.

WHAT IS SAID OF THE "JOURNAL OF MINING" BY THE PRESS.

From the N. Y. Evening Post, April 4, 1866.

Messrs. Western & Co., 37 Park Row, have begun the publication of the AMERICAN JOURNAL OF MINING. It is a handsomely printed newspaper of sixteen pages, and the first number is filled with valuable articles. Mr. George F. Dawson, the editor, is an experienced journalist, and a man of great industry and activity in the origination and diffusion of knowledge. We believe there is room for a Mining Journal of a higher scope than we have had, and the present sheet looks as though it would meet the public want.

A casual remark in an article on drilling by compressed air shows that our countrymen do not always succeed in keeping themselves first among the foremost, even in the introduction of mechanical improvements:

"By the introduction of compressed air these outlays can be almost entirely avoided, now that we have a power at hand available as steam for doing our mining work, at points where steam cannot be used. We must seek out and set to work the best machinery for drilling the rock and cutting the coal. More than three years of steady work at the Mount Cenis tunnel, and almost as long in English mines, demonstrates the fact that there are machines to be had which will do good work, and have them we must; if our own countrymen cannot furnish them we must import them or be behind the age. Is it not remarkable that in the department of mining and drilling rocks, few, if any, improvements have been made, while in almost all other branches of industry the advance has been marked and regular?"

From the N. Y. Express April 3, 1866.

STATE OF MINING.

The AMERICAN JOURNAL OF MINING, a new paper just published, and a *very acceptable one*, we should think, *to the mining interests of the country*, says, though the season is dull:

"The gold and silver mines of Nevada, Montana, Idaho, Colorado, Arizona, Oregon, New Mexico, never yielded larger returns. Those of California manifested decided symptoms of improvement. The copper product of the great copper region bordering Lake Superior exhibits no decrease; and the coal, iron and lead mines of Pennsylvania, Wisconsin, Illinois, and other States, certainly hold their own. Most encouraging accounts as to the mineral wealth of Virginia, Georgia, and others of our Southern States also continue to come in.

"The petroleum product, in spite of the heavy tax imposed upon 'crude,' is growing, and when Congress shall have lifted the galling burden from the producers' shoulders, it must become a highly remunerative branch of mineral industry. The excitement relative to Montana and Idaho does not seem to have been materially affected by the glowing accounts from New Granada; and the more recent reports from the Big Bend mines, in British Columbia, although bearing the imprint of truth, serve but to increase the heat of many adventurous minds to swell the populations of those two favored Territories, as by traveling via San Francisco and Portland, to either Montana or Idaho, they might visit Big Bend without diverging much from their line of travel."

Of the speculative feeling so common and involving heavy losses, it is said, and *no t truly*, we think, that:

"Mining can never, as a rule, be profitably conducted, unless as a legitimate business. But as a business it can, without a doubt, be carried on most remuneratively."

From the Messager Franco-Americain, April 4, 1865.

[TRANSLATION.]

We have received the first numbers of a scientific journal which has just been established in New York, called the AMERICAN JOURNAL OF MINING. The new publication concerns itself with the mines of every kind which enrich the soil of America, from the gold mines of California and of Colorado to the mines of petroleum and coal of Pennsylvania. The discription of the different methods of mining, and of the machinery invented by modern genius, are accompanied by wood cuts drawn with care. The text is clear and legible to every one. In fine, as far as may be judged by a first and necessarily very rapid examination, the JOURNAL OF MINING is destined to be of great utility, not only to engineers but to persons of all conditions who, having an interest in mining, wish to get a *complete raisonne* of the chances of gain or loss offered by the different speculations.

From the Mining Journal, Pottsville, Pa.

AMERICAN JOURNAL OF MINING.—This is the title of a neat and interesting sixteen page weekly paper, edited by George Francis Dawson, Esq., and published at 37 Park Row, New York, by Western & Co. It is devoted to general mining matters, and will we judge from the contents of the first number, pay much attention to gold and silver mining in the West, now attracting investment and immigration. It is a paper that bears upon it every indication of capacity to command success, which we heartily hope it will secure. The subscription price is four dollars a year.

From the N. Y. Atlas, April 14, 1865.

AMERICAN JOURNAL OF MINING.—We have received the first two numbers of a new weekly bearing this title, which promises to supply a much felt want. The rapid development of the mineral resources of this country that has recently taken place, and the great pecuniary interests thus called into existence, have created a necessity for a reliable journal of the kind, to disseminate mining news, and serve as a medium of communication for all concerned in the mining business. This publication is under the editorial charge of George Francis Dawson, and is issued in unexceptionable style, typographically.

From the Chicago Evening Journal, April 7, 1866.

A NEW MINING JOURNAL.—We have received from the publishers, Messrs. Western & Co., 37 Park Row, New York city, the initial number of the *American Journal of Mining*. It is a handsomely printed weekly of sixteen pages, and is filled with valuable articles. Mr. George F. Dawson, the editor, is an experienced journalist, and a man of great industry and activity in the origination and diffusion of knowledge. We believe there is room for a mining journal of a higher scope than we have had, and the present sheet looks as though it would meet the public want. The subsbsription price is $4 per annum.

From the Philadelphia Daily News.

A NEW MINING JOURNAL.—We have received the first number of a new journal which is devoted to the mining interest, under the title of the *American Journal of Mining*, which is published in New York by Messrs. Western & Co., with Mr. George Francis Dawson as editor. The initial number is gotten up with much taste, and promises to be a valuable adjunct to the important interest for whose benefit it is designed. It will be published weekly at $4 a year.

From the. N. Y. Field, Turf and Farm, April 7, 1866.

The first number of the first volume of a new paper, the *American Mining Journal*, has been laid upon our table. Its editor is George Francis Dawson, who informs us in his salutatory, that he will ignore politics altogether, in conducting the paper. We regard this as a wise determination, and if the policy is adhered to, the *Mining Journal* will receive that support which will insure success. It is devoted to the mining interests of the country, and is published at 37 Park Row.

From the Scientific American.

AMERICAN JOURNAL OF MINING.—This is a neat, well-printed journal, lately started, and devoted, as its title indicates, to mining and kindred matters. It is illustrated and contains full reports of the condition and prospects of the mines in Colorado, California, and other territories. It is published by Western & Co., 37 Park Row, at $4 a year.

From the Rino Times, April 5, 1865.

JOURNAL OF MINING.—The first number of a weekly journal to be devoted to mining interests, has been issued by Western & Co., New York, under the able editorial charge of George Francis Dawson. It contains sixteen pages, published in handsome style, and we hope will meet with abundant success.

From the New Yorker Staats-Zeitung.

[TRANSLATED.]

The first number of the *American Journal of Mining*, edited by Mr. George F. DAWSON, is before us and we welcome it. We think the *Journal* has made its appearance just in the right time.

MARKET REVIEW.

FRIDAY EVENING.

There was a slight reaction in the value of gold during the past week. The price at 2 o'clock to-day was 126⅞. The demand for money is somewhat more lively. For loans 5 per cent. is paid, and with government collaterals 4@4½ per cent. First-class paper is in request at 6 to 7 per cent., and second-class good paper at 7½ to 8½. Foreign exchange steady. Bank bills on London, at 60 days, 107¼ to 107½; three days' sight, 108¼ to 108⅛. Commercial bills 106⅛@107¼; on Paris at 60 day's 5f. 30c. to 5 26¼.

The exports of specie from New York, during the week ending April 17, were	$6,267,451
Corresponding week, last year	1.613.293
Increase	$4 654,138

The shipments of treasure from San Francisco, per steamer Golden Age, March 10th, are as follows:

Bank of California	$195.500 00
Abel Guy	140.350 00
London and San Francisco Bank	126.332 74
Donohoe, Kelly & Co.	103,100 00
B. Davidson & Berri	95,832 56
Parrott & Co.	82.101 54
Wells, Fargo & Co.	66.0[illegible]8 64
Other shippers	64,242 73
Total	$873.303 21

DESTINATION.

To New York	$710,753 21
To France	142,550 00
To Panama	20.000 00
Total	$873,303 21

The stock market for government securities is firm, as also for the more steady dividend-paying stocks, showing a uniform advance. For mining, petroleum, and coal stocks, we refer to our tabular returns for each day during the past week.

The imports during the week ending April 14, were	$5,760,841
Corresponding week last year	2,392,575
Increase	$3,368.266

There is a better feeling in the Metal market, though without improvement in prices or important sales. The uncertainty as to future tariff rates, embarrasses trade considerably.

Iron.—Pig Iron is favorably influenced by the cessation of the Albany strike. About 2,000 tons No. 1 American have been sold at an average of $40 per ton; No. 2 at $38 to $40, at Elizabethport, and 1,000 tons Scotch, at $42 50 to $43 50.

Copper—Is held more firmly at 28c. to 28½c., for Baltimore; 29½c. to 30c. for Detroit; 28½c. to 29c. for Portage.

Tin—Is lower, both for Straits and Banca.

Petroleum—Is quiet, but firm at 24½c. to 25c. for Crude; 40c. to 41c. for Refined, in bond.

NEVADA STOCKS.

San Francisco Quotations.

LATEST BY MAIL.

NAME.	FRIDAY, March 16. Opening	Closing	Sales for week Ending March 23. Shares.	Amount.
Sierra Nevada	$ 75	$ 75	3	$ 2.925 00
Imperial	150	137½	822	111.615 00
Gould & Curry	.....	.....	5	5.200 00
Chollar—Potosi	390	400	280	15.433 00
Yellow Jacket	775	800	218	153.676 00
Bullion	110	125	365	38,796 00
Crown Point	1400	1400	41	55.452 00
Belcher	315	325	181	49.122 00
Overman	60	65	199	12.712 00
Ophir	680	725	252	165,998 00
Hale & Norcross	1050	1050	45	46,861 00
Exchequer	.....	.....	44	397 00
Savage	1040	1050	120	120.164 00
Empire Mill	200	200	54	10.300 00
Alpha	200	200	15	4.040 00
Blue Ledge	.....	.....	.....	.....
Lady Bryan	.....	.....	.....	.....
Dancy	.....	.....	128	1,706 00
California Tunnel	.....	.....	.....	.....
Balt. American	.....	196	.....	1,806 00
Real del Monte	.....	.....	.....	.....
Confidence	48	52½	482	25,784 00

LATEST BY TELEGRAPH.

SAN FRANCISCO, April 14.

Name.	Bid per foot.
Gould & Curry	900
Savage	1090
Chollar—Potosi	355
Ophir	800
Hale & Norcross	940
Crown Point	1375
Yellow Jacket	850
Belcher	360
Alpha	445
Imperial per share	150

DAILY QUOTATIONS OF MINING AND OIL STOCKS.

OIL STOCKS.	April 14. BID.	April 14. ASKED.	April 16. BID.	April 16. ASKED.	April 17. BID.	April 17. ASKED.	April 18. BID.	April 18. ASKED.	April 19. BID.	April 19. ASKED.	April 20. BID.	April 20. ASKED.
Benechoff Run	11 05	11 20	10 95	11 50	10 90	11 20	11 10	11 40	11 25	11 40	11 20	11 55
Benechoff Mutual												
Buchanan Farm	35	44	35	40	36	37	40	42	37	41	36	39
Bliven	50					2 50	50					3 00
Bradley	13	20	15	19	15	19	14	18			13	15
Brevoort	1 00	1 95	1 30	2 00	1 25	3 00	1 50	3 00	1 50	2 00	1 75	2 00
Central	2 10	2 30	2 15	2 30	2 00	2 10	2 05	2 15	2 05	2 08	2 00	2 05
Empire City Pet'm Co	25	40	30	45	30	34	30	40	30	46	36	40
Empire and Pit Hole	10	25	10	45		14		20	10	25	12	20
Excelsior	75	90	75	90	65	85	65	85	65	85	52	65
First National	14	19	15	19	14	15	14	15	13	14	11	13
Hamilton McClintock	1 25	1 90	20	2 00		2 00	50	1 75		1 25	1 10	1 25
Ivanhoe	2 55	2 80		2 85	2 50	2 85	2 50	3 00		2 90	2 55	2 80
Mt. Vernon						25				30		40
N. Y., Phila. & Baltimore				60	10	50		55		90		50
N. Y. & Alleghany	3 00	2 50		3 25	3 00	3 25	3 00	4 00	3 25	3 50	3 30	3 50
Northern Light								3 00		2 25		2 50
Oil Creek of N. Y	80	90	75	90	82	95	80	90	80	90	80	85
Palmer Petroleum				2 50	40					2 00		05
Pit Hole Creek	2 90	3 00	2 80	2 95	2 85	3 00	2 90	2 90	2 85	2 90	2 80	5 85
Pit Hole Farms	2 00	2 25		2 00	1 75	2 00	1 90	2 00	1 80	2 00	1 95	
Rynd Farms	10	25	16	25	15	25	17	20	17		21	30
Shade River	40	60	30	60	25	50	25	45	33	35	38	45
Sherman Oil Co												
Union		8 00										7 50
United States	8 85	9 00	9 05	9 25	9 00	9 05	9 05	9 25	9 20	9 30	9 25	9 35
Webster	30	45	20	45	21	25	25		30	50	30	40
FREE LIST.												
Allen Wright												2 00
Bergen Oil & Coal					11			15	7			20
Bennechoff & Fit Hole						20		30				
Brooklyn	25	90		80		70		1 00		50		1 00
Cherry Run Petroleum co				20	5	20		25		25		20
Clinton Oil	1 00	1 40				1 00		1 50	75	1 30		1 40
Consolidated (New York)						1 80						1 75
Equitable		5 00										
Enniskillen						3 00						
Fee Simple												
Forest Co. Petroleum Co												
Germania												
Great Western Consolidated	15	15	5	10		12		10	10	10		
Guild Farm		35				30			20	50	5	8
Heydrick				50		30			15		25	
Heydrick Bros			20					30			15	10
High Gate										45		
Homowack		10		15								
Inexhaustible		15	5	50	8	20	3	30	5	25		
Liberty								18				5
Lilly Run		20				20						10
Manhattan												15
National		20				25						
New York & Newark				4 00		4 00						4 00
New York & Philadelphia	8	12			9	14	8				8	15
Second National						50						
Oceanic	50			1 00			50	1 00	65		50	1 00
Passaic	15	21		25		25		25		25	15	20
Pit Hole Consolidated												
President												
Petroleum Consolidation		18		16		18				18		18
Southard	10	75		60				60		50		45
Sherman & Barnsdale		20		30				30		20		30
Tack Petroleum Co. of N. Y		20		10		20		10		20	4	10
United Petroleum Farms	18	21	18	25	18	23	19	20	18	20	15	20
Vevango & Pit Hole		3 00		2 75		3 00				3 00		3 00
West Va. Oil & Coal Co	6	8	5	6	7	20	5	20	7	11	6	8
MINING STOCKS.												
American Flag		3 20		3 15		3 50		3 20	3 05	3 25	3 10	3 20
Atlantic & Pacific		3 60	3 25	3 50	3 25	3 50		3 75		3 75	3 60	3 75
Bates & Baxter Gold	2 05		2 50	2 75	2 50	2 65	2 50	2 60	2 50	2 60	2 25	2 85
Benton Gold	1 85	2 00	1 80	2 00	1 90	2 00	1 85	1 95	1 75	2 00	1 65	1 75
Burroughs Gold		50								1 00		
Black Hawk												
Briggs Gold												
Robtail Gold	3 25	3 75	3 25	3 75		3 90	3 00	3 75		3 75		
Consolidated Gregory	17 85	18 25	17 60	18 45	17 20	17 75	16 00	16 60	16 40	17 00	16 00	16 20
Corydon	1 65	2 50	1 70	2 25			1 50	1 72	1 00		1 60	2 50
Downieville Gold	38	40	38	42	40	42	38		38	39	36	40
Eagle Gold						2 50				2 50		
Gunnell Gold	1 15	1 20	1 11	1 14	1 10	1 15	1 06	1 10	1 06	1 10	1 00	1 05
Gunnell Central		5 15		5 15		5 00		5 00		5 00		5 50
Holman	32	36	38	40	45	48		40	35	38	31	35
Hope Gold		5 00		4 55	3 50	4 25		4 25		4 60	3 50	4 00
Kipp & Buell Gold	2 05	2 30	2 12	2 20	2 25	2 50	2 20	2 40	1 95	2 00	1 90	1 95
La Crosse Gold						1 50		1 55		1 50		1 50
Liebig Gold				2 00		1 90		1 20		1 25		1 25
Manhattan Gold		2 00						2 25				2 00
Montano			1 15	1 30	1 50	1 50	1 00	1 00	1 00	1 40	1 05	1 40
New York	1 10	1 25	37	40	38	40	40	50	36	50	30	35
Perigo Gold	30	50		20 00								
Quartz Hill	4 20	4 35	4 17	4 25	4 70	4 75	4 85	5 00	5 00	5 10	5 40	5 45
Silver Eagle		2 00										
Smith & Parmelee Gold	9 60	9 80	9 75	9 95	9 00	9 50	9 00	9 10	8 90	9 10	8 40	8 60
Texas Gold	75	80	75	75	70	76	50	70	50		50	55
Union Gold												
Waddingham Gold		14 00		14 00		14 00				14 00		
Caledonia Copper												
Canada Copper				75								75
Central Copper										75		
Evergreen Bluff Copper												
Excelsior Copper												
Hilton Copper		1 50	50	1 50					1 50	2 50		
Manhan Lead			2 50				2 60		2 65	2 85		
Knowlton Copper	3 00		11 50				3 25		3 00			
Mendota Copper		5 00		5 00		4 50		5 00		5 00		4 50
Minnesota Copper	14 00	16 00	10 00	13 00			14 00		13 00			
Sanitary Copper												
Ogima Copper			3 50	4 50	3 50		3 00				3 50	5 00
Phœnix Lead & Mining Co	2 05	2 50	2 50	2 50	2 25	2 50	2 00	2 50		2 00	2 00	2 50
Wallkill Lead		1 10				1 10		1 10		1 00	50	90
Columbian Coal	2 00							4 25				
Copake Iron	40		50	1 00	40		50	75	50	75	50	75
Mt. Alpine Gold												
Rocky Mountain Gold	2 00											
Clute Lead												
Denbo Lead	8	25	10	25	7	15	10					
Isle Royal							11 50					
Foster Iron												
British American Coal												
Waverly Co					4 00	5 00		5 00	3 50	4 50		
Lake Superior						65 00						

CHEMICALLY PURE PREPARATIONS USED IN THE VOLUMETRIC ASSAY.

Acid, Acetic	$0 75 lb
" Arsenious	0 05 oz
" Hydrochloric	0 50 oz
" Nitric	0 60 lb
" Oxalic	0 20 oz
" Sulphuric	0 75 lb
Ammonia	0 60 lb
Baryta, Carbonate	0 20 oz
" Hydrate	0 40 oz
" Nitrate	0 12 oz
Barium, Chloride	0 12 oz
Copper, Sulphate	0 10 oz
Iodine	0 75 oz
Iron, Sesquichloride, Cryst	0 25 oz
Lead, Nitrate	0 10 oz
Mercury, Peroxide	0 20 oz
" Protonitrate	0 25 oz
" Chloride	0 20 oz
Potassa, Carbonate	0 25 oz
" Bichromate	0 15 oz
" Bichromate, Fused	0 20 oz
" Chromate	0 15 oz
" Hydrate	0 40 oz
" Ferrocyanide	0 25 oz
" Permanganate	0 18 oz
" Sulphate	0 10 oz
Silver, Nitrate	Gold 1 10 oz
Soda, Acetate	0 10 oz
" Carbonate	0 10 oz
" Hydrate	0 20 oz
" Phosphate	0 10 oz
Sodium, Chloride	0 10 oz

PRICES OF ASSAYING IMPLEMENTS.

[CORRECTED WEEKLY.]

Smelting Furnaces	$35 00@ 40 00
Cupelling "	35 00@ 40 00
Scales	10 00@ 30 00
Assay Balances and Weights	100 00@200 00
Plumbago Crucibles	25@ 1 50
Paris "	15@ 1 25
Porcelain Evaporating Dishes	25@ 5 00
Fire Tongs	75@ 3 50
Hammers	1 00@ 2 50
Funnels	15@ 1 00
Litmus Paper, quire	1 00@ 1 25
Ingot Moulds	1 25@ 3 00
Flasks, Bohemian Glass	15@ 1 00
Sand Baths, Iron	25@ 1 00
Pliers	50@ 2 00
Mortar and Pestle, Iron, Agath, etc	50@ 20 00
Lamps, Gas and Alcohol	75@ 5 00
Blowpipes	50@ 3 00
Hydro-Oxygen Blowpipes	25 00@125 00
Pincers, or Cutting Pliers	75@ 1 50
Glass Tubes, German, Bohemian, etc., per lb	75@ 1 50
Muffler	50@ 1 50
Anvils	1 00@ 2 00
Cupel Moulds	3 50@ 5 00
Cupels, per doz	50@ 3 50
Bone Ash, per lb	25@ 50
Test Lead, "	50@ 75

NEW YORK METAL MARKET.

[CORRECTED WEEKLY.]

Antimony	Regulus, per lb	13 *a* 14 c
	Crude	
Bismuth		
Borax		33 c.
Brimstone		5 c.
Copper, Ingot	Crude, per ton	67 50 *a* 72 50
	Lake Superior, per lb. cash	28 1-2 *a* 29
	Baltimore	
	Pig Chili	28 *a* 28 1-2
	Bolts	45
	Braziers	45
	Sheathing	45 c.
	Yellow metal	31 c.
Iron—Pig	No. 1 Scotch, per ton	42 50 *a* 43 50
	No. 1 American	40 *a* 42
	No. 2, "	38 *a* 40
	No. 1 Charcoal	
Bar	Swedish, ordinary sizes	150 00
	Amer. & Eng. refined	115 00 *a* 120 00
	" " common	105 00 *a* 110 00
	Rails, Amer. currency	85
	" Eng. gold	56
	Horse shoe iron	140 00 *a* 147 50
	Rods 5-8 and 3-16 round and square	122 1-2 *a* 185
	Band	145 00
	Nail rods, 5-8 and 3-16	122 1-2 *a* 185 00
	Hoops	145 00 *a* 215 00
	Sheets, Russian, per lb	31 *a* 32
	" English "	7 *a* 9 1-2
	" American "	25
	Boiler Plates, Eng	
	" Amer	
Steel	Best cast in Bars, war	22
	Best sheet cast "	22
	Best cast circular saw plates 46 in	28
	Double shear steel, war	28
	Single " " "	19
	Montague & Co. C. S. in bars	19
	Round machinery cast	15
	Best German	15
	Gov't. German	12
	Eagle German	13
	(L.) Blister, war	19
	W. Jessop & Sons, blister, war	16
	Double refined	24
	Stone Axe shapes	24
	Common blister	13
	2d quality sheet	19
	3d quality sheet	16
Lead	American Per 100 lb	
	German	8 25 *a* 8 45
	Spanish	8 25 *a* 8 45
	English	8 25 *a* 8 45
	Bar, per lb	9
	Pipe and sheet	11 3-4

TIN	Banca Govt., per lb., gold	.23 *a* 23 1-2
	Straits	.21-12 *a a* 22
	English	.22
TIN PLATES.	IC, 10-14 prime charcoal	$14 00
	IX 10-14 " "	.16 75
	IC 12-12 " "	.14 50
	IX 12-12 " "	.17 25
	IC 14-20 " "	.15 00
	IX 14-20 " "	.17 75
	IC 14-20 Roofing ch. 1st	.13 00
	IC 14-20 " " 2d	.12 00
	IC 14-20 " Coke	9 75
	IC 10-14 Coke	.11 75 *a* 14 00
SPELTER	Lehigh, per lb., currency	.11 *a* 12 00
	Foreign " gold	.7 *a* 7 1-4
ZINC	Mussulman & Amer.	12 1-2 *a* 13
SOLDER	No. 1	.24
	No. 2	.22

LONDON METAL MARKET.

LONDON, April 6th, 1866.

		£.	s.	d.	£.	s.	d.
COPPER	Best selected...Per ton,	94	0	0			
	Tough Cake & Tile "	91	0	0			
	Burra Burra "	93	0	0			
	Copper wire...per lb.			12			
	Do. Tubes "			12¼			
	Sheathing & Bolts per ton,	96	0	0			
	Bottoms "	101	0	0			
	Old (Exchange.) "	82	0	0			
IRON	Bars Welsh in London	7	10	0	*a* 8	0	0
	Do., to arrive	7	10	0	7	12	6
	Nail Rods	8	7	6	9	5	0
	Do. Stafford in London	8	15	0	8	17	6
	Bars....Do.	8	15	0	10	0	0
	Hoops...Do.	9	15	0	10	10	0
	Sheets, single	10	7	6	11	0	0
	Do. Spikes	11	0	0	12	0	0
LEAD	English Pig Common	21	5	5			
	Do. ordinary soft	21	10	0			
	Do. (W. B.)	22	15	0			
	Do. Sheet	0	0	0	21	15	0
	Do. Red Lead	23	10	0	24	0	0
	Do. White	27	0	0	30	0	0
	Do. Patent Shot	23	15	0	24	0	0
	Spanish	20	2	6	20	5	0
	Sheets per lb.			10½			
	Wire "			10¼			
	Tubes "			11½			
STEEL	Swedish in Kegs rolled) per ton	13	0	0	14	0	0
	Do. (hammered)	15	0	0	16	0	0
	Do. in faggots	16	0	0	16	10	0
	English Spring	19	0	0	23	0	0
	Quicksilver per bottle	8	0	0	nom.		
SPELTER	Foreign per ton.	24	0	0			
	To arrive "	24	0	0			
ZINC	In Sheets	30	0	0			
TIN	English Blocks	91	0	0			
	Do. Bars in barrels	92	0	0			
	Do. refined	94	0	0			
	Banca	85	10	0			
	Straits	84	10	0	*a* 00	0	0
TIN PLATES	I C Charcoal 1st qu. pr. bx.	1	15	0			
	I X Do. 1st quality	2	1	0			

In London: 20 s. less at the works.
Yellow Metal Sheathing per lb. 9
Sheets per lb. 9
Indian Charcoal Pigs { in London 7 0 0 7 10

* At the works, 1s. to 1s. 6d. per box less.

COPPER ORES.

SOLD AT TABB'S HOTEL, REDRUTH, MARCH 29.

MINES.	TONS.	PRICE.	MINES.	TONS.	PRICE.
South Caradon	567	£4906 19 6	Phœnix Mines	235	£604 2 6
Wheal Rose	500	1821 7 6	West Caradon	173	874 3 0
Cliff'd Amalgat'd	430	859 10 0	Gonamena	111	284 3 6
North Treskerly	300	1509 15 0	Craddock Moor	34	111 7 0
Gt. Wheal Busy	283	584 14 0	Wheal Polmarma	28	130 18 0
Fowey Consols	250	1248 6 6			

Average Standard, £114 10 0; Average Produce, 6½; Average Price Per Ton, £4 8 6; Quantity of Ore 2 921 Tons; Quantity of fine Copper, 183 Tons 2 cwt.; Amount of Money, £12,935 10 6.

LAST SALE.

Average Standard, £120 18; Average Produce, 5¾; Standard of Corresponding Sale Last Month, £114 0 0; Produce, 6½.

COMPANIES BY WHOM THE ORES WERE PURCHASED.

NAMES.	TONS.	AMOUNT.
Vivian & Sons	345½	£3,076 14 4
Freeman & Co	266 5-6	973 18 4
Grenfell & Sons	354½	1,553 3 0
Sims, Willyams & Co	463 2-3	1,194 19 7
Williams, Foster & Co	697 1-3	2,623 5 3
Mason & Elkington	555 5-6	2,585 9 9
Bankart & Sons	319	1,007 3 6
Copper Miners' Company	347½	1,041 13 3
Charles Lambert	370	927 17 3
Total	3,767	£16,991 6 0

GOLD.

COMPANY.	SHARES.	STOCK.	SITUATION OF MINE.	SECRETARY & PLACE OF BUSINESS.
Acadia			Nova Scotia	H. W. Nelson, 24 City Ex., Boston
Albion	½	500,000	Halifax, Nova Scotia	H. W. Nelson, 24 City Ex., Boston
Alps	100,000	250,000	Illinois Central Dist., Col.	I. Stanton, Jr., 25 Nassau, N. Y.
Ascot	50,000	5,000,000	Sherbrook, C. E.	G. H. Morrison, 17 Nassau, N. Y.
Atlantic				Chas. Barrett, 13 Doane, Boston.
Atlantic & Pacific	50,000	5,000,000	Humboldt T., Humboldt co.	J. N. Sewall, 8 Broad, N. Y.
American	100,000	5,000,000	Gregory Dist.	
American Flag	60,000	600,000	Nevada Dist., Col.	H. Foles, 12 Pine, N. Y.
Astor	200,000	1,000,000	On Comstock Lode	J. Chapman, 71 Broadway, N. Y.
Baltic			Colorado	New York.
Bates & Baxter			Colorado	New York.
Bay State	200,000		Colorado	Lem'l Bangs, Boston.
Boston	100,000	500,000	Colorado	F. W. Capon, 34 Ex. Pl., N. Y.
Buck Hawk	50,000	5,000,000	Gilpin co., Col.	D. Littlejohn, 81 John, N. Y.
Bacon		500,000	Halifax co., Nova Scotia	J. B. Post, 20 Ex. Pl., N. Y.
Bobtail	100,000	1,000,000		J. Stanton, Jr., 25 Nassau, N. Y.
Briggs	10,000	1,000,000	Gilpin co., Col.	D. Littlejohn, 81 John, N. Y.
Burroughs	100,000	1,000,000		L. Bangs, 22 Pine, N. Y.
Ballion	200,000	1,000,000	Bannock, Montana	55 Liberty, N. Y.
Calvin	200,000	1,000,000	Clear Creek co., Col.	12 Pine, N. Y.
Canadian				A. Call, 7 Phœnix B'l'g, Boston.
Central				25 Nassau
Chem. Gold & S. R				64 B'way
Cn. Un. Gold Co				66 B'way
Chebucto	100,000	500,000	12 miles from Halifax	J. E. M. Gilley, Boston.
Clarendon		500,000	5 miles from Halifax	H. Doane, 41 State, Boston.
Chase	5,000	500,000	Colorado	W. E. Lawton, 81 John, N. Y.
Central Gold M.	20,000	1,000,000	Central City, Col.	L. Bangs, 22 Pine, N. Y.
Central Mining	200,000	1,000,000	Colorado	46 Exchange Pl., N. Y.
Chandiere	100,000	500,000	5,000 A Famine Riv. C. E.	Wm. B. Fowle, Boston.
Cobden	100,000	1,000,000	Idaho	New York.
Colonial				
Colorado Boston			Colorado	R. C. M'Laughlin, 60 State, Bos'n.
Colorado N. Y.			Colorado	12 Pine, N. Y.
Coleman			Colorado	New York.
Columbia	50,000	3,000,000	Austin City, Nevada	10 Pine, N. Y.
Consuelo Gold				31 Pine.
Consol Gregory	50,000	5,000,000	Gregory Dist., Col.	30 Pine, N. Y.
Cook & Kimball	1,000	150,000	Colorado	W. W. Baldwin, 35 Wm., N. Y.
Copalinshee	250,000	5,000,000	Parke co., Col.	J. C. Stocker, 137 B'way, N. Y.
Corrisance	100,000	1,000,000	Colorado	New York.
Commonwealth			Nevada	Philadelphia.
Corrydonn	100,000	2,500,000	Gilpin co., Col.	46 Exchange Pl., N. Y.
Continental	20,000	2,000,000	Gregory Dist., Col.	115 Liberty, N. Y.
Central Gold	200,000	1,000,000		L. Bangs, 22 Pine, N. Y.
Dauphin & Colo.	200,000	1,000,000	Colorado	D. P. Southworth, 423 Walnut, Pa.
Bay & Bushnell	300,000	3,000,000	Colorado	T. Chalmers, Jr., 20 Ex. Pl., N. Y.
Dwyer	50,000	1,000,000	Gilpin & Clear Creek, Col.	J. Wadsworth, 61 Cedar, N. Y.
Devonshire				W. Stockbridge, 74 Fr'klin, Bos'n.
Downieville	500,000	500,000	Colorado	J. C. Harriott, 70 Wall, N. Y.
Dorset			Chandiere River, C. E.	F. McJimsey, 59 Wm., N. Y.
Eagle	100,000	1,000,000	Gold Dirt Dist., Col.	J. P. Davies, 81 John, N. Y.
East Bunnack	100,000	200,000	Bannack City, Montana	J. Callender, 48 Ex. Pl., N. Y.
Eldorado	500,000	2,500,000	San A Dist., 9 miles of Austin	208 S. Fourth, Phila.
Empire	250,000	5,000,000	Clear Creek, Col	H. K. Gates, 191 B'way, N. Y.
Empire Mill & M				O. F. Griffin, San Francisco.
Enriquetta			Arizona	New York.
Esperanza		500,000	Star D., Humboldt co.	117 Broadway, N. Y.
Flint	50,000	500,000	Nevada Dist., Col.	C. W. Bryant, Boston.
Excelsior	30,000	300,000	Central City, Col.	J. Weatherbee, Jr., 11 P. B'g, Bos.
Frame Falls	100,000	1,000,000		D. L. Dodge, 30 B'way, N. Y.
Garrisons	100,000	5,000,000	Colorado	C. G. Mease, 29 William, N. Y.
Gem	25,000	1,200,000		H. K. Gates, 191 B'way, N. Y.
Georgetown			Colorado	New York.
Gilbert River				C. E. Jackson, 18 Pho'x B'g, Bos'n.
Gilpin				C. W. Galloupe, 76 State, Boston.
Golconda	250,000	5,000,000		J. H. Sherman, 19 Broad, N. Y.
Gold Field				C. B. Cowling, 39 Kilby, Boston.
Gold Rock			Colorado	113 Wall, N. Y.
Gold River				W. H. Chessman, 9 Central, Bos'n.
Gold Hill	50,000	500,000	Colorado	W. T. Eustis, Boston.
Gold Mountain			Colorado	New York.
Gold Min'g of Col	50,000	5,000,000	Colorado	E. Latham, 23 William, N. Y.
Gunnel Central			Colorado	70 Broadway, N. Y.
Gunnel Gold	300,000	3,000,000	Colorado	F. E. Roelfson, 78 & 80 B'way, N.Y
Gregory	20,000	1,000,000	Colorado	Thos. Wikles, 17 William, N. Y.
Grenada	50,000	125,000	Colorado	J. Stanton, Jr., 25 Nassau, N. Y.
Great Western	60,000	600,000	Russel Dist., Col.	E. Keneys, 70 Broadway, N. Y.
Gunnel Gold	100,000	1,000,000	Colorado	F. E. Roelofson, 74 B'way, N. Y.
Halifax				A. Case, 7 Phœnix B'l'g, Boston.
Hep'b'ge Ranch	50,000	500,000	El Dorado, Cal.	
Hope	80,000	2,000,000	G'ld Dirt Lode, Gilp. co., Col.	J. P. Davies, 81 John, N. Y.
Holman	150,000	300,000	Clear Creek co., Col.	J. O'Neill, 23 Wm, N. Y.
Humboldt	100,000	500,000	Colorado	78 B'way,
Idaho	100,000		Montana	5 Pine, N. Y.
Invincible				
Isaac's Harbor	100,000	500,000	Isaac's Harbor, Nova Scotia	W. F. Shirley, 137 B'way, N. Y.
Ide B'y de				44 Ex. Pl.
Kansas Colorado	100,000	1,000,000	Colorado	J. G. Greenlies, 111 B'way, N. Y.
Kent				G. H. Wyman, 19 Pine'x B'l'g, Bos.
Kip & Buell	100,000	200,000	Colorado	J. C. Harriott, 70 Wall, N. Y
Knick'b'cker & Nevada	100,000	1,000,000		
La Crosse	100,000	$1,000,000	Nevada Dist., Colorado	H. Fales, 12 Pine, N. Y
Liebig	200,000	1,000,000	Colorado	
Lake Major	12,000	600,000	Nova Scotia	Fred. Franck, 113 Water, N. Y.
Mariposa Gold	100,000	10,000,000	Bear Valley, Cal.	G. W. Farlee, 34 Wall, N. Y.
Mammoth	50,000	500,000	Colorado	J. Jarrett, 41 Liberty, N. Y.
Manhattan	100,000	1,000,000	Colorado	W. R. Lothrop, 172 B'way, N. Y.
Massachusetts	250,000	1,200,000	Gilpin co., Col.	W. D. Briggs, 11 Phe'x B'l'g, Bos.
Merchants	30,000	600,000	Alturas co., Idaho	157 Broadway, N. Y.
Metropolitan				
Mountain Pride	100,000	1,000,000	B'r C'k, St. Bse., Idaho	29 Pine, N. Y.
Montague	50,000	500,000	near Halifax, Nova Scotia	C. B. Cowling, 39 Kilby, Boston.
Mount Alpine			Griffith Dist., Clear C'k., Col.	J. B. Randol, N. Y.
Mount Vernon	500,000	5,000,000	Mt. V. & Mam'th Dist., Nev.	25 Park Row, N. Y.
Mount Vista	50,000	500,000		J. Chapman, 23 Nassau, N. Y.
Montana	100,000	500,000	Nevada, Ills., Greg'y, Col.	A. L. Guerber, 54 Wm. N. Y.
Montezuma	100,000	500,000	Colorado	F. B. Webster, Boston.
Montrose	100,000	1,000,000	Clear Creek co., Col.	C. A. W. Sibley, 80 B'way, N. Y.
Morning Star		5,000,000	Owyhee co., Idaho	137 B'way, N. Y.
Mexican Pacific	100,000	10,000,000	Mexico	J. Mackie, 88 Wall, N. Y.
Melones & Stan			Calaveras co	606 Mont, San Francisco.
National	300,000	3,000,000	on So. Boulder C'k, Col.	31 School, Boston.
Nevada Star				25 Pine, N. Y.
New England	50,000	150,000	Black Hawk, Col.	J. Weatherbee, Jr., Boston.
New Mexico			near SantaFe	
New Gregory				W. A. Kent, 144 State, Boston.
New York City	50,000	5,000,000	G'd Canon D't, Land. co. Nev.	10 Pine, N. Y.
New York Dist.	50,000	500,000	Austin, N. Y. Dist., Nevada	71 B'way, N. Y.
New York of Col	100,000	1,000,000	Colorado	F. E. Roelfson, 74 B'way, N. Y.
N. Y. & Nevada	100,000	1,000,000	Nevada	J. J. Osborn, 30 Pine, N. Y.
N. Y. G Min'g.	100,000	1,000,000	Colorado	F. E. Roelofson, 78 & 80 B'way
N. Y. & Eldor'do			Nevada	106 B'way, N. Y.
N. Y. & Idaho			Idaho	180 Chatham, N. Y.
N. Y. & Santa Fe			Nevada	New York.
N. Y. & O. G. & S. M.		1,000,000	Owyhee co., Idaho	137 Broadway, N. Y.
N. Y. & O. F. G. & S. M.	10,000	1,000,000	Owyhee co., Idaho	4 Pine, N. Y.
N. Y. & Reese R			Nevada	New York.
N. Y. & Washoe			Nevada	New York.
North Clear C'k	100,000	1,000,000	Gilpin co., Col.	J. Francis, 80 B'way, N. Y.
Nova Scotia				Chas. Barrett, 13 Doane, Boston.
N. Y. & Nova Sc	100,000	1,000,000	Tangier, Nova Scotia	Jos. E. Gay, 3 Hanover, N. Y.
National S Min'g		1,500,000	Owyhee co., Idaho	115 B'way, N. Y.
Occidental	5,000	500,000	Nevada & Ills. C. Dist., Col.	100 B'way, N. Y.
Oldham				Chas. Barrett, 13 Doane, Boston.
Ophir	62,500	625,000	on Comstock Lode, Nevada	Moses A. Hopsock, 47 Ex. Pl.
Pacific	40,000	4,000,000		24 Pine, N. Y.
People's	100,000	5,000,000	Alpine & Sierra cos	23 Nassau.
Peck				F. R. Sawyer, 144 State, Boston
Perigo	60,000	3,000,000	Ind. Dist., Gilpin co., Col.	J. W. Stratton, 20 B'way, N. Y.
Pine Mountain	30,000	3,000,000	Pine Mountain Dist., Nev.	F. K. McCully, 157 B'way, N. Y
Pioneer & Inskip			Buena Vista Dist., Nevada	15 Nassau, N. Y.
Phila. & Color'do	20,000	1,000,000	Central City, Col.	E. W. Clark & Co., Phila.
Phelps & Gilm're			Colorado	New York.
Pleasant Valley	125,000	1,250,000	Colorado	J. S. Lyon, 69 Wall, N. Y.
Pontiac	50,000	1,000,000	Ill. Cen. M Dist., Col.	R. H. Rickard, 19 Nassau.
Prescott	100,000	1,000,000	Central Arizona	69 B'way, N. Y.
Prince Albert				W. H. Chessman, 9 Central, B'stn
Quaker City			Ind't D't. G'd D't City, Col.	103 South Third, Phila.
Quartz Hill	40,000	100,000	Nevada Dist., Col.	J. A. Tyler, 29 Wall, N. Y.
Rancho C'k	10,200	1,200,000	Pine Wood Dist., Nevada	18 Broad, N. Y.
Realito		1,600,000	G'd Hill D., Storey co., Nev.	117 B'way, N. Y.
Renfrew				W. Stockbridge, 74 Fr'klin, Bos'n.
Republic	15,000	1,500,000	Amador D., Lander co., Nev.	67 Exchange Pl., N. Y.
Rocky Mountain	50,000	500,000	Grey & Empire Dists., Col.	E. L. Bolles, 49 Ex. Pl., N. Y.
Reciprocity	100,000	1,000,000	Canada East	B. B. Grant, Jr., 71 B'way, N. Y
Scorpion			Virginia City, Nevada	617 Clay, San Francisco.
Sherbrooke	100,000	1,000,000	Sherbrooke, Canada East	F. Schumacker, Cliff, N. Y.
Silas Wright	60,000	600,000	Amador D., Lander co., Nev.	18 Wall, N. Y.
Silver State	100,000	500,000	Humb't Starr, Pr. R. D'n Humb't co., Nevada	R. S. Miller, 49 William, N. Y.
Silver Wave	300,000	3,000,000	Rescue riv., Lander co., Nev.	Emmet Blair, 243 B'way, N. Y.
Smith & P'rmlee	125,000	2,500,000	Colorado	G. A. Lathrop, 4 Broad, N. Y
Spanish		3,000,000	La Plata, Churchill co., Nev.	228 South Third, Phila.
So. Clear C'k			Colorado	Canastota, N. Y.
Starlight Ledge	50,000	500,000	P'ville, El Dorado co.	
Star of Color	200,000	2,000,000	Colorado	J. N. Powers, 22 Pine, N. Y.
Standard	50,000	500,000	Gregory Dist., Col.	T. A. Mitchell, 12 Wall, N. Y.
Steptoe	20,000	2,000,000	G'd Can., Lander co., Nev.	157 B'way, N. Y.
Sterling City		1,200,000	Colorado	New York.
Stewart	100,000	500,000	Colorado	C. Durham, 31 Exchange, Boston
Suffolk				Carles Cobb, 22 William, N. Y.
Southard				Wm. Wallace, 11 Doane, Boston
Stafford				C. E. Jackson, 15 Central, Boston
Tascher	100,000	1,000,000	Colorado	F. J. Wright, 8 Wall, N. Y.
Texas	50,000	500,000	Black Hawk City, Colorado	Wm. E. Parish, 155 B'way, N. Y
Trinuto			San Antonio, L. Cal.	San Francisco.
Union	240,000	12,000,000	Colorado	F. A. Potts, 110 B'way.
United States	75,000	1,500,000	Colorado	J. P. Stevens, N. Y.
Victoria				W. H. Chessman, Central, B'stn
Virginia City	250,000	250,000	Nevada	J. B. William, 78 & 80 B'way.
Wauba Yuma	600,000	6,000,000	Arizona	35 William, N. Y.
Waddingham	24,000	600,000	Alturas co., Idaho	157 B'way, N. Y.
Waverley				J. Leighton, 97 State, Boston
Windsor Gold M	10,000	100,000	Colorado	25 William, N. Y.
Wilson & Case			Colorado	New York

SILVER.

COMPANY.	SHARES.	STOCKS.	LOCATION OF PROPERTY.	SEC'Y AND PLACE OF BUSINESS.
Argentine	50 000	$250.000	Argentine Dist., Colorado	D. L. Dennison, 134 State, Boston
Arizona	200,000	1,000,000	22 m W of Tubac, Arizona	J. B. Randol, 32 Pine st., N. Y
Astor	200.000	1,000.000	On Comstock Lode, Nev	J. Chapman, 71 Broadway, N. Y.
Atlantic & Pac	50,000	1.000.000	Humboldt T, Hum't Co, Nev.	J. N. Sewall, 8 Broad st., N. Y.
Big Smoky	20.000	600,000	Smk'y Hill, Lander Co. Nev.	
Black Eagle	7.000	350.000	Carson, Owyhee co., Idaho	O. D. Gardner, 40 Maiden lane.
Bullion	200,000	1,000,000	Bannock, Montana	55 Liberty street.
Bush	50.000	500,000	Austin City, Nevada	176 Chambers st., N. Y.
Colorado Con			Cedar Hill Nevada	New York.
Columbia	30.000	3,000,000	Austin City, Nevada	10 Pine street, N. Y.
Conn. & Nevada	120,000	1,250,000	Averill, Churchill Co. Nev	47 Liberty street, N. Y.
Commonwealth			Nevada	Philadelphia.
Cosmos	10 000		Awyhee Co, Idaho	137 Broadway, N. Y.
Del Norte & S'br			Lower California	New York.
Durango	5 000	500,000		R. R. Garrison, 73 W'm st., N Y.
East Bannack	100.000	200,000	Bannock City, Montana	J. Callender, 49 Ex. Pl., N. Y.
Empire G. & S. Empire and Silver State	100,000	10.000 000	Bodie Bluff, Mono	H. R. Gates, 191 Broad'y, N. Y.
			Nevada	New York.
Eldorado	500,000	2 500,000	San A 9 m S of Austin, Nev	208 South Fourth street, Phila.
Essex & Bladem	125,000	2 500,000	Sierra dis, Humboldt C. Nev.	A. R. Wetmore, 81 Vesey st., N.Y.
Franklin			Nevada	Philadelphia.
Gem	200.000	1 200,000		H. K. Gates, 191 B'way, N. Y.
Globe			Nevada	69 B'way, New York.
Good Hope	20,000	1.000.000	40 m S of Austin, Nevada	80 Broadway, N. Y.
Huron			Montana	New York.
Lucas	300,000	300.000	Summit co., Colorado	J. P. Whitney, 16 Lindall, Post.
Knickerb'r and Nevada	20.000	2.000.000	Union Dis, Nye Co, Nev	25 Nassau street, N. Y.
Lander County			Nevada	New York.
Lincoln		1 000,000	Owyhee co, Idaho	80 Broadway, N. Y.
Lw'r California	40.000	2.000 000	North Part of Lower Cal	55 William street, N. Y.
Madison	30.000	3,000,000	Nevada	W. W. Perkins, 71 Bd'way, N. Y.
Macedon			Nevada	Philadelphia.
Manhattan			Nevada	New York.
Merchants	50.000	600,000	Alturas Co, Idaho	157 Broadway, N. Y.
Metropolitan	15.000	1 500.000	Austin City, Nevada	158 Broadway, N. Y.
Morning Star	5,000	5.000.000	Owyhee County, Idaho	157 Broadway, N. Y.
Mount Vernon	500,000	5 000,000	Mount Vernon & Mammoth District, Nevada	New York.
Mount Vista	50.000	500,000		J. Chapman, 71 Bway, New York.
National	15,000	1.500.000	Owyhee Co, Idaho	115 Broadway, N. Y.
Nevada	100.000	300,000	Mountain Wells, D. Ch. co Nev	325 Walnut street, Phila.
Nevada	120.000	1 200.000	Nevada	F. L. Bodes, 49 Ex. Place, N. Y.
New York				78 Broadway, New York.
New York City	50,000	5.000,000	Gold Can Dist. Lander Co. N	10 Pine street, New York.
New Y'k Dis'ct	50.000	5.000.000	80 m E'm Austin, N. Y. Dis. Nevada	S. A. Hopkins, 71 Broadway, N Y
New Y'k & Nev. G. & S. M. & M. N. Y. & O. G. & S. M. Co	10.000	1,000.000	Nevada	J. J. Osborn, 30 Pine street, N. Y.
		1.000.000	Owyhee Co. Idaho	6 Pine street, New York.
N. Y. & O. F. G. & S. M	10.000	1 000.000	do do	115 Broadway, New York.
N. Y. and Silver Peak	20 000	2,000,000	Nye County, Nevada	74 Broadway, New York.
N Y. & Santa Fe			Nevada	New York.
N. Y. & Washoe			Nevada	New York.
North Am. M'g			Nevada	Philadelphia.
Ocean Transit		1,500.000	Lower California, Mexico	24 Pine, N. Y.
Ophir			On Comstock Lode, Nev	
People's	100,000	500.000	Alpine & Sierra Counties	8 Pine street, New York.
Phœnix	200.000	2,000.000		48 East 26th street, New York.
Picacho	50.000	2.000.000	Arizona	T. H. Perkins, New York.
Pine Mount'n	30.000	3,000,000	Pine Mount'n Dist. Nev	F. K. McCulley, 100 Bd'way, N. Y
Pioneer and Inskip			Buena Vista Dis, Austin, Nev	15 Nassau street, New York.
Prescott	50.000	2,500.000	Arizona	T. H. Perkins, New York.
Republic	15.000	1.5 0,000	Amador, D Lander Co. Nev	67 Ex. Place, New York.
Revenue Extension				
Rosario and Carmen	5 244	1 480,000	Sinaloa, Mexico	San Francisco.
Rough Diamond				
San Antonio	60,000	3,000 000	Arizona	C. Lemon, 21 Nassau st., N. Y
Silas Wright	60,000	600 000	Amador, D Lander Co. Nev	18 Wall street, New York.
Silver Hill	40 000	1,000,000	Nevada	62 Broadway, N. Y.
Star Hill	20,000	1,000,000	Nevada	
Sun Cr Crk			Colorado	Canastota, New York.
Stephenson	500 000	1 000 000	18 m E of Ft. Fillmore	A. S. Kellogg, 22 Pine, New York.
Steptoe	20,000	2,000.000	Gold Can. Lander Co. Nev	10 Pine, New York.
Sterling City		1.200,000		New York.
Tempest	200.000	1,000,000		L. Pauss, 22 Pine street, N. Y.
Triunfo			San Antonio, Lower Cal	San Francisco.
Toyabee	50,000	5 000.000	Pine W'd, Ma'ta Dis. Nev	J. M. Brown, 157 B'way, N. Y.
Union & El D'o	100,000	1,000,000	Mogul Silver Min'n	
Wauba Yuma	600 000	6,000,000	Arizona	35 William street, New York
White Mountain S. & L			New Hampshire	111 Broadway, New York.

COPPER.

COMPANY.	SHARES.	CAPITAL.	SITUATION OF PROPERTY.	SEC'Y, AND PLACE OF BUSINESS.
Adventure,	20,000		parts of Sections 35, 36, T. 51, N Range 38 W,	W. H. Smith, 51 Ex. Pl, N. Y.
Etna,	20.000		1226 A in Secs. 6, 7, 18, T. 58, N R 27, W Keweenaw co. Mich.	B. A. Hooper, 324 Walnut St., Phil.
Alb'ny & Bost'n,	20,000		Secs. 7, 8, 9, 10, 11, T. 55, R. 33	Fred. Beck, 43 City Ex., Boston.
Anita,	20,000		Del Norte co., California,	8 Wall St., N. Y.
Algonah,	20,000		W½ S, 30, T. 51, R. 37,	L. W. Clark, Boston.
Allouez,	20.000		Town 57, R. 32, Sec. 31,	Horatio Bigelow, Boston.
Amy gil'yd'l.,	20,000		E½ Secs. 16, 21, T. 58, R. 20, NW¼ Sec. 5, T. 57, R. 31, 160 A,	F. H. Womrath, 324 Walnut St., Philadelphia.
Arcadian,	20,000		NW¼ Sec. 20, T. 57, R. 33, 160 A,	C. P. Dixon, 48 Pine St., N. Y.
Astor,	20,000		NW¼ Sec. 5, T. 57, R. 31, 160 A,	A. W. Boardman, 35 Court St., Boston.
Atlas,	20,000		NE¼ of E½ of NW¼ of NW¼ Sec. 31, T. 58, R. 31,	L. W. Clark, Boston.
Aztec,	20,000		W½ Sec. 31, T. 51, N. of R. 37,	L. W. Clark, Boston.
Bay State,	20,000		SW¼ Sec. 29, T. 58, R. 31,	L. W. Clark, Boston.
Beaver,	20.000		NE¼ Sec. 32, T. 58, R. 31,	A. W. Boardman, Boston.
Bohemian,	20 000		E½ Sec. 31, NW¼ Sec. 32, T. 51, R. 37, W,	R. H. Rickard, 21 Nassau St., N Y H. W. Warren, 60 City Ex., B'st'n.
Boston,	20,000			H. P. Mount, 3 Hanover St., N. Y.
Canada,	100,000		Brome co., Canada East,	
Carp Lake, M.,	20,000		T. 51, N. R. 43, W. S½ of N½ of N. Sec. 14, and E¼ Sec. 23, and NE¼ Sec. 23, 440 A,	W. H. Abel, 70 Wall St., N. Y.
Cascade, M.	20,000		SW¼ Sec. 9, T. 49, N. R. 39, W., in Ontonagon co., Mich.,	G. F. Riley, 35 Wall St., N. Y.
Copper Creek,	1,000	$100,000	Missouri,	H. M. Thompson, Missouri, Mo.
Copper Falls,	20,000		Sec. 14, T. 58, N. R. 31, W, Keweenah Point,	27 City Exchange, Boston.
Copper Harbor,	20,000		S½ Sec. 10, T. 58, R. 28, 320 A, Keweenah co.,	Fred. Beck, 43 City Ex., Boston.
Copper Creek,	20,000	500,000	Douglas co., Wisconsin,	T. B. Lawson, 73 Broadway, N. Y.
Central,	20,000		E½ Sec. 23, T. 58, N. R. 31, W,	J. M. Mills, 284 Pearl St., N. Y.
Cornwall,			Stratford, Orange co., Vt.,	D. H. Whitney, 17 State St., B'n.
Continental,	200,00	500,000	Martinsburg, New York,	J. Sickles, 50 Ex. Pl., N. Y.
Corinth,	20,000	500,000	Corinth, Orange co., Vermont,	W. A. Cleveland, 191 B'way, N.Y.
Copper Hill,			Wisconsin,	Boston.
Dacotah,	20,000		Sec. 35, T. 55, R. 34, Portage Lake,	J. M. Cooper, Milk St., Boston.
Delaware,	20,000	500.000		S. M. May, 326 Walnut St., B'st'n.
Derby,			Ontonagon co., Mich.,	P. C. Blancan, 35 Wall St., N. Y.
Dorchester,	20,000		800 A.,	31 and 32 City Ex., Boston.
Douglas,	20,000		E¼ Sec. 30, T. 55, R. 3,	S. J. Edwards, William St., N. Y.
Dolby,				H. Bigelow 43, City Ex., Boston.
Eagle River,	20,000		T. 58, R. 31, Secs. 28, 29, 33, 34,	A. Lamson, 70 State St., Boston.
Ely,	100,000	500,000	325 A., Richmond, Canada East,	Ernest Sacchi, 82 B'way, N. Y.
Empire,	20,000		1798 A., Secs. 1, 2, 11, 12, T. 58, N. K. 28, W. K'w'n co., Min.,	J. S. McMullin, 423 Walnut, Phil.
Eureka,	20,000		W½ Sec. 2, T. 49, N. R. 41, W. Ontonagon co.,	H. Shirley, 137 B'way, N. Y.
Evergreen Bluff,	20,000		NE¼ Sec. 6, T. 50, R. 38,	F. W. Capen, 44 Ex. Pl., N. Y.
Flint Steel R.,	20,000		Sec. 11, 12, T. 50, N. R. 39, W,	F. K. McCully, 19 Nassau St., N.Y.
Forest City,	20,000		320 A. NE¼ Sec. 36, and SE¼ Sec. 25, T. 51, R. 43,	J. F. Paul, 19 Phœnix Building, Boston.
Franklin,	20,000		SW¼ Sec. 24, T. 55, N. R. 34 W.,	C. Emery, 26 Kilby St., Boston.
Franconia,	60,000	300,000	New Hampshire,	J. Hanna, 162 Fulton St., N. Y.
French Creek,	100,000		Chester co., Pennsylvania,	R. Roberts, 21 Nassau St., N. Y.
Garden City,	20,000		SW¼ Sec. 60, N. W. Sec. 29, T. 58, N. R. 31 W,	J. R. Valentine, Chicago.
Girard,	20,000		600 A. Sec. 15, T. 58, N. R. 28, W. Keweenaw co., Mich.,	B. A. Hoopes, 324 Walnut, Phil.
Gr'd Portage,	20,000		SW¼ Sec. 36, R. 34, W,	A. S. Kellogg, 22 Pine St., N. Y.
Great Western,	20,000		SE¼ Sec. 30, & SW¼ Sec. 29, T. 21, K. 320 A., Ontonagon	J. M. Cooper, 24 City Ex., B'st'n.
Hamilton,	20,000		SE¼ Sec. 35, S½ Sec. 36, T. 50, R. 41, SW ¼ Sec. 21, R. 29, 14¼ A.,	J. B. Townsend, 44 Exchange, N. Y.
Hancock,	20,000		SW¼ S.c. 26, Tract of Sec. 25, T. 5, R. 34, W.,	Fred. Beck, 43 City Ex., Boston.
Hanover,	20,000			do. do. do. do.
Hartford,	20,000	500,000	320 A. E½ & SE¼ Sec. 32, SW¼ & W½ Sec. 33, T. 50, R. 40, W,	T. M. Tyng, 61 Cedar St., Boston.
Henwood,			Michigan,	
Hope,	20,000	50,000		21 Nassau St., New York.
Humboldt,	20,000		Sec. 21, T. 58, R. 31, W,	Hor. Bigelow, 43 City Ex., B'st'n.
Hudson,	20,000		Ontonagon co.,	P. C. Blancan, 35 Wall St., N. Y.
Huron,	20,000		Sec. 2, T. 54, R. 34, W,	Hor. Bigelow, 43 City Ex., B'st'n.
Isle Royale,	20,000		NW¼ Sec. 1, T. 54, R. 34, W,	F. W. Capen, 33 Ex. Pl., Boston.
Keweenaw,	20,000	500,000	Michigan,	F. W. Capen, 44 Ex. Pl., Boston.
Knowlton,	20,000		SE¼ Sec. 1, W½ of SW¼ Sec. 1, and other lands,	Fayette Brown, Cleveland, Ohio.
Lafayette,	20 000		Secs. 25, 30, 36, T. T. 51, N. R. 43, and 44, W, Ontonagon,	P. C. Blancan, 35 Wall St., N. Y
Lyster,	200,000	$400,000	Township Nelson, Canada East,	H. W. Nelson, 24 City Ex., B'st'n
Lower California	40,000	2,000,000	N. part of Lower California,	55 William St., N. Y.
Madison,				Hor. Bigelow, 43 City Ex., B'st'n
Merrywether,	20,000		Secs. 9, 19, T. 48, N. R. 4, W,	J. T. Waters, New York.
Manitou,	20,000		680 A. Secs. 8, 17, 19, 30, T. 85, N. R. 29, W., Keweenaw co., Min.,	B. A. Hooper, 324 Walnut, Phil. J. W. Davies, 21 Nassau St., N Y.
Manhattan,	20,000		W½ Sec. 11, NW¼ Sec. 14, T. T. 51, N. R. 32, W,	M. Taylor, 30 Wall St., N. Y.
Mendotta,	100,000	500,000		J. M. Cooper, Pittsburgh.
Mass. M. Co.,	20,000		SW¼ Sec. 7, T. 50, N.R. 38, W,	L. Parr, 12 Phœnix B'ds, Boston
Mesnard,	20,000		NE¼ Sec. 24, T. 55, R. 34,	606 Mont St., San Francisco
Melones & Stan.,			Calaveras co.,	S. M. Pond, 12 Pine St., N. Y.
Minnesota,	20,000		Sec. 15, T. 50, N. R. 39, W,	Baltimore.
Maryland,			Maryland,	
Merrimac,	20,000		NW¼ Sec. 34, T. 51, R. 38, W,	J. M. Mills, 284 Pearl St., N. Y.
National,	20,000		Ontonagon, Sec. 16, T. 50, R. 39, W. 1 988 A	J. M. Cooper, Pittsburgh.
Native,	20.000		Keweenaw Point, Michigan.	W. F. Hardy, 27 City Ex., B'st'n.
Nashua,	50,000	100.000	320 A. N. Ontonagon.	S. W. J. Webb, 54 Wall St., N. Y.
Nebraska,	20,000		NE¼ Sec. 12, T. 50, and other lands,	G. S. Frost, Detroit.
Nequakett,	20,000		Sec. 26, T. 51, R. 43,	H. W. Nelson, 24 City Ex., B'st'n.
New York,	20,000		240 A. SE¼ Sec. 10, E½ NE¼ Sec. 15,	R. Roberts, 19 Nassau St., N. Y.
New Burra,			Baltimore,	W. Bowes, 17 William St., N. Y.
New Jersey Con.	100,000	1,000,000	New Jersey,	T. H. Belt, Jr. 23 William St., N.Y.
N. Y. & Passaic,	100,000		Harrison, Bergen c.,	T. H. Belt, Jo. do do.
New Devon,				17 William St., N. Y.
North Western,	20,000		W½ Secs. 24, 25, 26, E½ Secs 36, 35, T. 58 N R 31,	J. M. Cooper, Boston and Detroit.
Norwich,	20,000	500.000	Secs. 11, 12, T. 40, N.R. 39, W. and other lands, 1,300 A.,	P. C. Blancan, 35 Wall St., N. Y
Ogema,	20,000	500,000	NW¼ Sec. 6 T. 50, N.R. 33, W.	S. Cooper, 137 Broadway, N. Y.
Ontonagon,	20,000		631 A. Secs. 20, 21, 28, T. 50 N. R. 39, W. Rockland, Ontonagon.	G. Hart, 11 Pine Street, N. Y. William D. Williams, Michigan
Ont'n'g'n, Mass.	20.000			C. Windsor, 60 Wall St., N. Y.
Otisville,	100,000	500,000	Otisville, Orange co., N. Y.,	
Penn. Manuf'g.,	20,000	1,000,000	4 320 A. Secs 13, 14, 15, 24 ¼ Secs 10, 11, 12, 23, 25, T 58, N. R. 30, W.,	S. M. Day, 326 Walnut St., Phil.
Pewabic,	20,000		W½ Sec. 25, T. 55, N.R. 34, W.	C. Emery, Kelby St., Boston.
Pitts. & Boston,	20,000		Ts 58, 57, N. R. 31, 32, W 12 495 A.,	H. A. Johnston, Pittsburgh.
Pontiac,	20.000		SE¼ Sec. 13, T. 55, N. S. 31, W.	C. Emery, Kilbey St., Boston
Portage Lake,	20.000		Houghton co, Michigan,	22 William St., N. Y.
Prescott,	100.000	1.000.000	Central Arizona.	69 Broadway, N. Y.
Providence,	20.000	500.000	240 A. in Keweenah co., NW¼ Sec. 10, W½ NW¼ Sec. 10, T. 57, R. 32, W.	J. W. Davis, 21 Nassau St., N. Y.
Phila. & Boston,	20.000		640 A. Sec. 14, T. 58, N. R 28, W. Keweenaw co., Mich.	J. S. McMullin, 423 Walnut St., Boston.
Quincey,	20.000		Sec. 26, T. 54, N. R. 34, W.	W. H. Smith, 51 Ex. Pl., N. Y.
Republic,	8.000	200.000		H. Baldwin, 70 Wall St., N. Y.
Reliance,	20.000		Secs. 21, 22, 27, T. 58, N. R 28, W. 10.785 A.	H. K. Thomas, 11 Wall St., N. Y.
Rochester,	200.000	500.000		J. A. Ferguson, 8 Wall St., N. Y.
Ridge,	10 000		Sec. 35, T. 51, R. 38, W,	J. Hanna, 34 & Wood Sts., Pitts.
Rockland,	20.000		Sec. 11, T. 50, R. 39,	S. J. W. Barry, 12 Pine St., N.Y.
Resolute,	20.000		1,120 A. Secs. 7, 18, 19, T. 58, N. R. 29, W. Keweenaw co., Mich.,	
St. Mary,	20.000			F. Beck, 45 City Ex., Boston.
St. Margaret,	200.000	1.000.000	Canada.	C. B. Sutton, 62 William St., N Y.
Sharon,	20.000		Ontonagon co., Mich.,	P. C. Blancan, 35 Wall St., N. Y.
Sheldon & Col.,	20.000		SE¼ Sec. 36, T. 55, R. 34, W,	S. J. Edwards, 22 Wm. St., N. Y
South Side,			SE¼ Sec. 24, T. 55, R. 34, W.	H. W. Nelson, Boston.
Societe Fran'se,	10.000		T. 58, 59, N. R. 28, 30 W.	Copper Harbor.
Suffolk,	20.000			Carlos Cobb, 22 William St., N.Y.
Superior,	20.000		W½ Sec. 14, T. 50, N R. 39, W	S. J. W. Barry, 12 Pine St., N. Y.
Toltec Consol.,	20.000		Secs. 25, 26, R. 50, R. 36.	H. W. Nelson, Boston.
Union,	20.000	500.000		A. S. Kellogg, 22 Pine St., N. Y.
Ural,			Wisconsin.	17 William St., N. Y.
Vulcan,	20.000		1 120 A. Secs. 7, 17, 18, T. 58, N.R. 27, W. Keweenaw co.,	F. K. Womrath, 324 Walnut, Phil.
Victoria,	20.000		Secs. 20, 29, 30, 34, 34, T. 50, R. 39, and other lands,	L. W. Clarke, Boston.
W. Minnesota,	20.000		Secs. 17, 18, 19, T. 50, N. R. 39, W.	C. T. Howard, Boston.
Wickopee,	100.000	500.000	Massachusetts.	G. A. Sneden, 12 PineSt., N. Y.
Vermont,	100,000	500.000	W. Fairlee, Orange co., Vt.,	
Waula Yuma,	600,000	6,000,000	Arizona,	35 William St., N. Y.

S, means section; T, township; R, range.

LEAD.

COMPANY.	SHARES.	STOCK.	SITUATION OF MINE.	SECRETARY & PLACE OF BUSINESS.
Ammonia	100,000	$ 500,000	Duchess co., N. Y.	G. Furman, 77 Cedar, N. Y.
Bucks County	40,000	200,000	Bucks co., Pa.	R. R. Sinclair, 53 Ex. Pl., N. Y.
Canada	50,000	250,000	Canada	Alb. Case, 7 Pine's B'l'g, Boston.
Champion				New York.
Clute	110,000	550,000	Macomb T. St. Law. co., N. Y.	Rev'l'y S. Merrill, 42 Cedar, N.Y.
Continental	200,000	500,000	Martinsburg, N. Y.	J. Sickles, 57 Ex. Pl., N. Y.
Denbo				
Eastport	100,000	1,000,000	Eastport, Me.	R. Vose, 54 William, N. Y.
Erie	40,000	4,000,000	Orange co., N. Y.	Ogden Gaul, 25 Pine, N. Y.
Hampton	100,000	500,000	Hampshire co., Mass.	C. W. Bryant, Boston.
Jefferson				65 Wall, N. Y.
King's Hill	10,000	50,000		W. L. Haskin, 180 B'way, N. Y.
Lake Superior	200,000	1,000,000	Secs. 5 & 36 T., 49 & 50 R., 28 & 29 Marquette co, Mich.	C. L. Mather, N. Y.
Lancaster	50,000	250,000	Lancaster co., Pa.	J. R. Sibley, 35 Pine, N. Y.
Macomb	110,000	550,000	Macomb T. St. Law. co., N. Y.	C. E. Scofield, 42 Cedar, N. Y.
Maine	50,000	500,000	Eastport, Me.	A. L. Butler, 54 William, N. Y.
Mineral Point	100,000	500,000	St. Lawrence co., N. Y.	H. W. Warren, 60 City Ex., B'stn.
Morgan	100,000	500,000		W. Williams, 42 Cedar, N. Y.
Mount Hope	80,000	200,000	Mt. Hope, Orange co., N. Y.	W. Williams, 24 Pine, N. Y.
New Hampshire	100,000	500,000	New Hampshire	W. A. Farrar, 71 B'way, N. Y.
N. Y. & Boston		1,000,000	Chester co., Pa.	S. M. Cockein, 22 William, N. Y.
Oswegatchie				24 Pine, N. Y.
Owens Lake	50,000	250,000		C. W. Bond, 78 Cedar, N. Y.
Placentia Bay	200,000	1,000,000	Newfoundland	J. Simpkins, 29 Wall, N. Y.
Ramsay	20,000	500,000	Township Ramsay, C. W.	C. W. Bryant, Boston.
Rochester	200,000	500,000		J. A. Ferguson, 8 Wall, N. Y.
Rossie				24 Pine, N. Y.
Rosa Clara	100,000	1,000,000		H. Lathrop, 25 Nassau, N. Y.
St. Clair	100,000	1,000,000		H. B. Hawkins, 25 Nassau, N. Y.
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THE ANNUAL REPORT OF THE DIRECTORS OF THE NINTH NATIONAL BANK TO THE STOCKHOLDERS.

NEW YORK, January 9, 1866.

The election was held this day, and the undersigned were unanimously re-elected Directors for the ensuing year. For this renewed and flattering expression of confidence on the part of the stockholders, the Directors return their thanks. The following is a STATEMENT OF THE CONDITION OF THE BANK, TUESDAY MORNING, January 2, 1866.

RESOURCES.

Loan and Discounts	$3,596,645 63
Government Securities	1,884,625 54
Furniture and Fixtures	13,000 00
Specie and Legal Tender	2,382,294 66
Checks and Bills on other Banks	959,171 71
Due from Banks and Bankers	756,111 23
	$9,591,848 77

LIABILITIES.

Capital Stock	$1,000,000 00
Surplus Profit after Paying Dividends	192,204 56
Dividends unpaid	53 336 58
Circulation	894,940 00
Deposits	7,451,367 63
	$9,591,848 77

In explanation we will say, that during the fiscal year, we have paid two Dividends of FIVE per cent. each, and the government taxes. And now exhibit an actual SURPLUS, over and above all losses, expenses and dividends, of NINETEEN per cent. on the CAPITAL STOCK. From the earnings of the last six months we have applied $50,000, that is FIVE per cent. on the Capital Stock, to the extinguishment of the premium account; and although the Stockholders do not get this Five per cent. in a dividend, yet it is represented in the United States Stocks held by the Bank. During the past year, your Bank became a member of the New York Clearing House Association, by an unanimous vote of that body. We are able to report, that your Bank has well fulfilled its patriotic mission, of aiding the placing of the Government Loans. The amount of subscriptions to the 7-30's was Forty-three Millions Two Hundred and Sixty-two Thousand Three Hundred Dollars ($43,262,300), this being the largest susbcription taken by any one Bank. To appreciate this result, we would remark, that had nineteen other banks taken each the same amount, the whole loan would have been taken by the twenty. This gives us opportunity to say, that having served our beloved country in its hour of peril, we desire now to turn all our efforts to the securing, in all legitimate and honorable ways, the increase of our business with the community; to that end we invite the cordial co-operation of each Stockholder. Our organization is now so well perfected as to give us all much satisfaction, and the relief from so much government business, gives our officers time to attend to individual dealers. Our deposits have been large, at times, during the year, reaching almost Twenty-one Millions of Dollars; but that was during the time the people were rushing to us with patriotic zeal, to offer their money to their country; now we can take the deposits of the business community; and we hold ourselves in readiness to DISCOUNT GOOD BUSINESS PAPER, payable at short dates. Such paper, being based on the sale of commodities, is, in our opinion, the safest business a bank can do.

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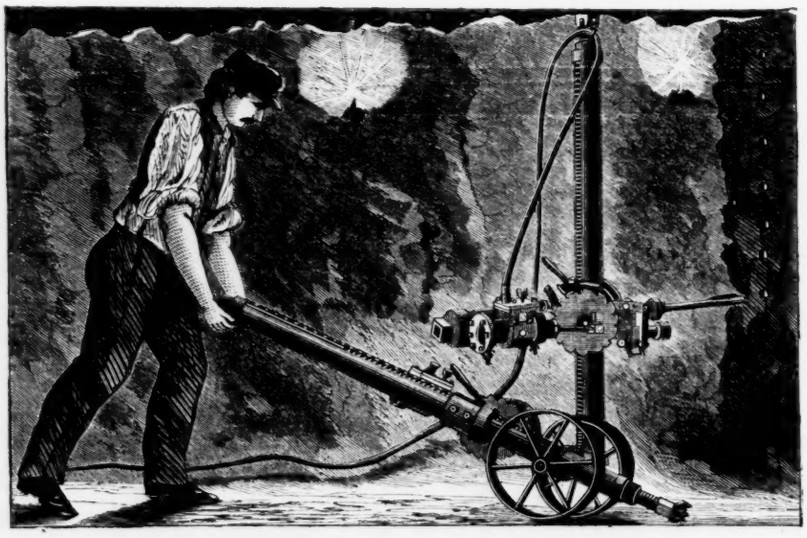
GEO. D. EMERSON, Mine Engineer,
Late of Lake Superior, Mich.



Certificate.

No. 95 Liberty street,
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DEAR SIR: Respecting the "Gardner Drill," I would say, we used it with perfect success on the Niagara Falls Canal. When we first worked it, we drilled in the solid limestone, holes of the diameter of six inches, at the rate of eighteen inches deep, in twenty minutes.

We used it for several months on the regular work and found it more economical and effective than any other drill we have ever used. The rock is the hardest kind of blue limestone, with occasional boulders of quartz imbedded in it. You are at liberty to refer parties to me who may desire more particulars.

S. M. ALLEN,
" Late President of Niagara Falls Water Power Company

☞ This cut represents a section of a mining tunnel, or *drift*, 6x4½ feet, with two Drilling Engines; one driven by *compressed air*, drilling horizontal holes, the other being moved by the Engineer to its position on a pair of wheels *temporarily* attached to its supporting column; three of these columns, with two machines on each, may be worked in a drift of this size, producing as much working effect as fully seventy-five men. A drift of this size through solid rock (Granite for example) can be thus driven ten lineal feet every 24 hours. ☜

These machines are very compact, measuring—independent of supporting column, etc.—30 inches in length by 12 inches breadth and depth, and weighing only 250 lbs. One man can move and adjust them to the work. The supporting column is held firmly in place by setting out the jack-screw, thus bracing it between the top and bottom of tunnel, or the sides of shaft, and the machines are raised and lowered by a gear working in the rack on side of column, while the attachments to the column form a *universal joint* and allow the machines to work *at any angle*. They are automatic; one engineer can attend to a gang of four or six, working on the same face. Six of them can be worked in a heading four and a half by six feet; and in a shaft six by twelve feet, eight of them can be worked at once. In a railroad, or other large tunnel, an increased number of machines can be operated, being supported and moved upon a carriage running on rails. The blow is struck by the drill being projected by the reactive force of an india rubber spring, against the rock; the drill being as free from the working machinery at the instant of striking, as an arrow shot from a bow; 300 blows per minute can be given with the utmost force the steel-drill point can bear. The cross-head to which the drill is attached is drawn back; (thus compressing the spring) by a cam rotated directly by the piston rod of an oscillating cylinder, the drill point has an automatic turning motion, and the entire machine an automatic feed, *self-regulating*, according to the varying hardness of the rock; the machine working equally well with the same adjustment when drilling on flint, or on granite cutting two inches deep per minute, or on measlate, sandstone, or other softer rocks, cutting four and six inches per minute. They drill equally well at any angle, and with them holes can be put in the most difficult places with great facility.

Machines for open cuts have been worked for several years on railroad and canal excavations, operated by four-horse engines drilling four, six and eight inch diameter holes, and doing the work of fifty men. Rock-Drilling can be done with these machines for one-tenth the cost of hand labor, and in one-tenth the time. We are prepared to furnish machines with *gangs of drills* for splitting granite, marble, etc; *channelling machines* for marble, etc., when blasting is to be avoided; also machines for cutting the "BEARING IN" in Bituminous Coal Mines: we also manufacture the GARDNER PATENT DRILL POINTS, especially desirable for sinking oil wells; making round holes, requiring no reaming, and cutting faster than any other point

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